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CHAPTER 1: THE STATE OF REGIONS IN SWITZERLAND

Key messages Chapter 1:

- **Regions in Switzerland are doing well in many respects.** They have high levels of GDP per capita, low unemployment rates and some regions show impressive growth rates. In addition, regions in Switzerland are not confronted to traditional development problems of many regions in the OECD, especially rural and remote regions, such as de-population, ageing and limited access to services.
- **An important challenge is regional labour productivity growth.** Several regions show lagging labour productivity rates, which drags down the overall labour productivity growth rates of Switzerland. Some of this lagging growth is connected to the sectoral specialisations of regions (in particular rural regions) and the lack of high tech-employment in some regions. Stimulating labour productivity growth in these regions is an important challenge for regional development policies in Switzerland.
- **Regions in Switzerland have become increasingly interlinked: functional realities now go beyond cantonal boundaries.** People and companies get more connected in wider areas, as illustrated by commuting flows, continuity in economic specialisations, patent links and business links. Especially around the main urban centres in Switzerland, a limited number of large functional regions are emerging that cross several cantonal boundaries. The economic flows also extend over the national borders to form cross-border functional regions. This has consequences for regional policies, implemented at cantonal level in Switzerland.

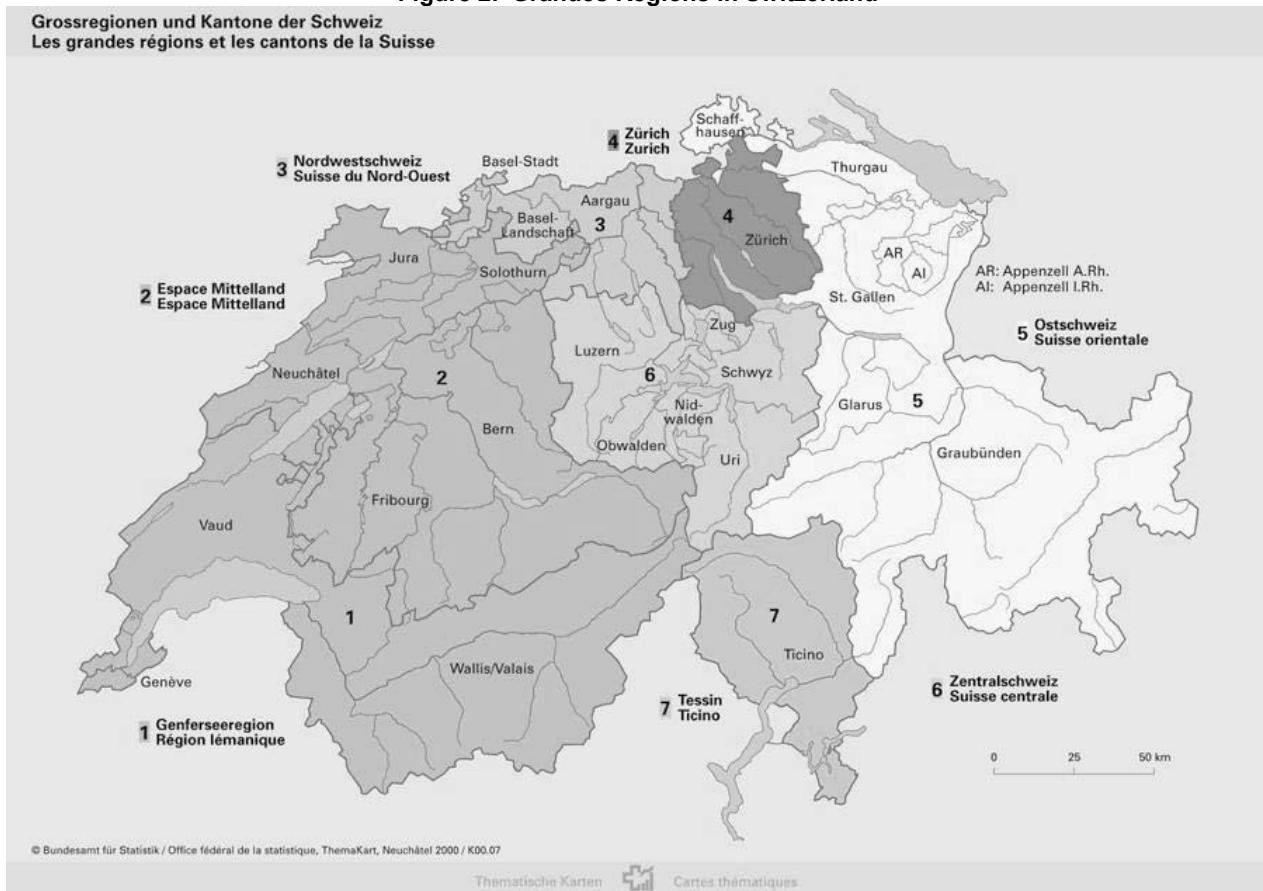
1.1 Regions in Switzerland: a multi-layered picture

1. **Switzerland is a federal country in which many responsibilities are delegated to cantons.** Cantons play a large role in policy-making and implementation in Switzerland, including in regional economic policies. Many cantons make regional development plans that form the strategic framework for economic development in the canton. In addition they make implementation programmes for the New Regional Policy (NRP) which include main initiatives within the field of regional economic development. There are 26 cantons in Switzerland (Figure 1). The second sub-national level of government consists of municipalities, of which there were 2,569 in Switzerland in February 2010.

Figure 1. Cantons in Switzerland

2. For reasons of international comparison, cantons are in this Review considered to be regions, as well as the *Grandes Régions* that are constituted by an aggregation of several cantons. There are several ways of defining regions, but not all of them facilitate international comparison. Regions throughout the OECD are categorised in the OECD Regional Database at two aggregation levels: TL2 (Territorial Level -2) and TL3. The higher level consists of large regions, whereas the lower level is composed of small regions. The level of cantons constitutes the so-called TL3-level; the level of seven *Grandes Régions* is at the TL2-level. In 2009, there were 1681 TL3-regions in the OECD and 335 TL2-regions. All the seven *Grandes Régions*, with the exception of Zurich and Ticino, comprise several cantons (Figure 2). These *Grandes Régions* only serve for statistical purposes and do not actually exist as institutions.¹ In the Swiss context, the term 'region' is also often used to indicate a territorial unit at sub-cantonal level. As there are no internationally comparative data available at this aggregation level, these territorial units will in this Review not be referred to as regions, but as sub-cantonal regions. In this Review, reference will also be made to functional areas; these are areas that are defined by functional relations of people and firms: a functional area can be considered to exist where commuting, business linkages and knowledge linkages are high. As will be illustrated in section 1.4, functional realities do often not coincide with administrative boundaries of regional and even national governments, nor do they necessarily correspond to intra- or inter-regional cooperative arrangements.

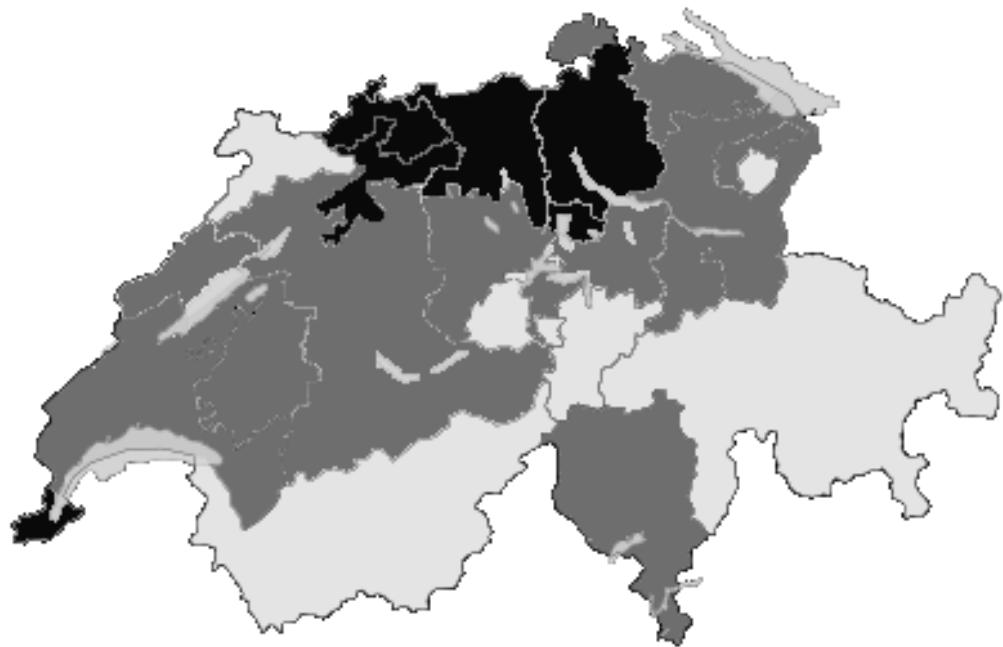
Figure 2. Grandes Régions in Switzerland



Source: Statistics Switzerland

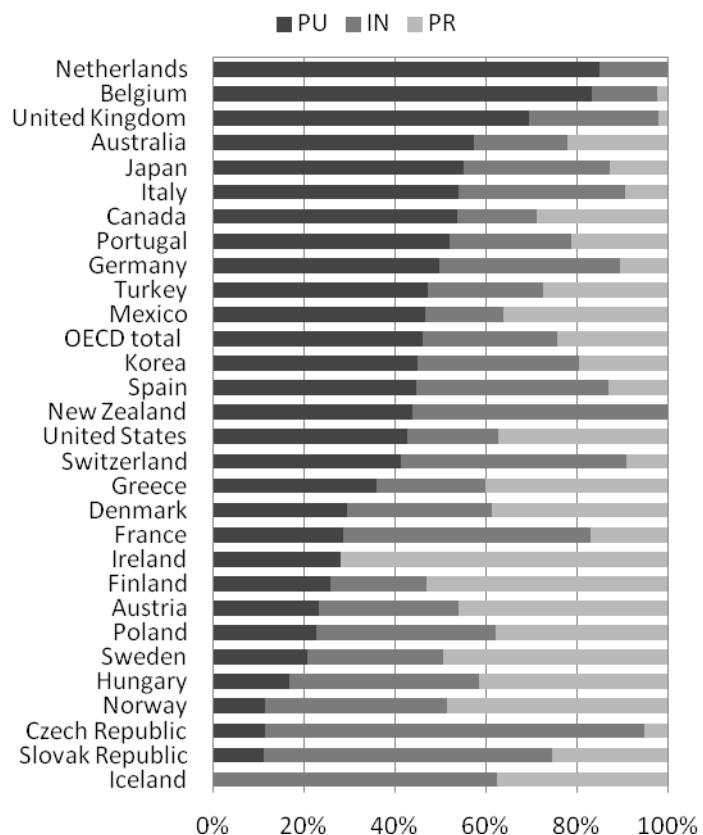
3. A relatively large share of the Swiss population lives in intermediate regions; a smaller part in predominantly urban or rural areas. The OECD Regional Database uses a regional typology that categorises regions (at the TL3-level) in three types: predominantly urban, intermediate and predominantly rural regions. Using this typology, Switzerland consists of seven predominantly urban cantons, twelve intermediate cantons and seven predominantly rural cantons. This typology is based on a set of criteria, the most important of which is population density.² Most of the urban cantons are concentrated in the North of Switzerland, while most of the rural cantons are located in the south, which is also the alpine part of the country (Figure 3).³ There is a large degree of correlation between population density and topographic conditions in Switzerland: the least populated territories being located in mountainous areas. The share of the Swiss population living in predominantly urban areas is 41%, this is slightly below the OECD average of 46%. At the same time the rural population share is 9%, clearly below the average in OECD countries (24%). Consequently, the share of the Swiss population living in intermediate regions (50%) is relatively large compared to the average in OECD countries (30%) (Figure 4). The distribution of land across Swiss regions is different from the average in OECD countries: the land surface of rural regions in Switzerland takes up a much smaller share (39%) of the total land surface in Switzerland than the average in OECD countries (80%). At a higher aggregation level of *Grandes Régions*, Switzerland appears to have two urban regions (Zurich and North West Switzerland), one intermediate region (Ticino) and four regions of mixed nature, made up by both rural and intermediate cantons (Espace Mittelland, East Switzerland and Central Switzerland), or a mix of urban, rural and intermediate cantons (Région Lémanique)⁴.

Figure 3. Regional typology of Switzerland (2008)



Source : Based on data from OECD Regional Database

Note: The regions indicated in dark are predominantly urban regions, the regions in lighter shades are intermediate regions and the regions in lightest shades are predominantly rural regions.

Figure 4. Typology of TL3-regions in OECD countries (2005)

Note: PU indicates predominantly urban regions, IN indicates intermediate regions and PR indicates predominantly rural regions.

Source: OECD Regions at a Glance 2009.

1.2 Characteristics of regions in Switzerland

1.2.1 Regions do not have de-population or acute ageing problems

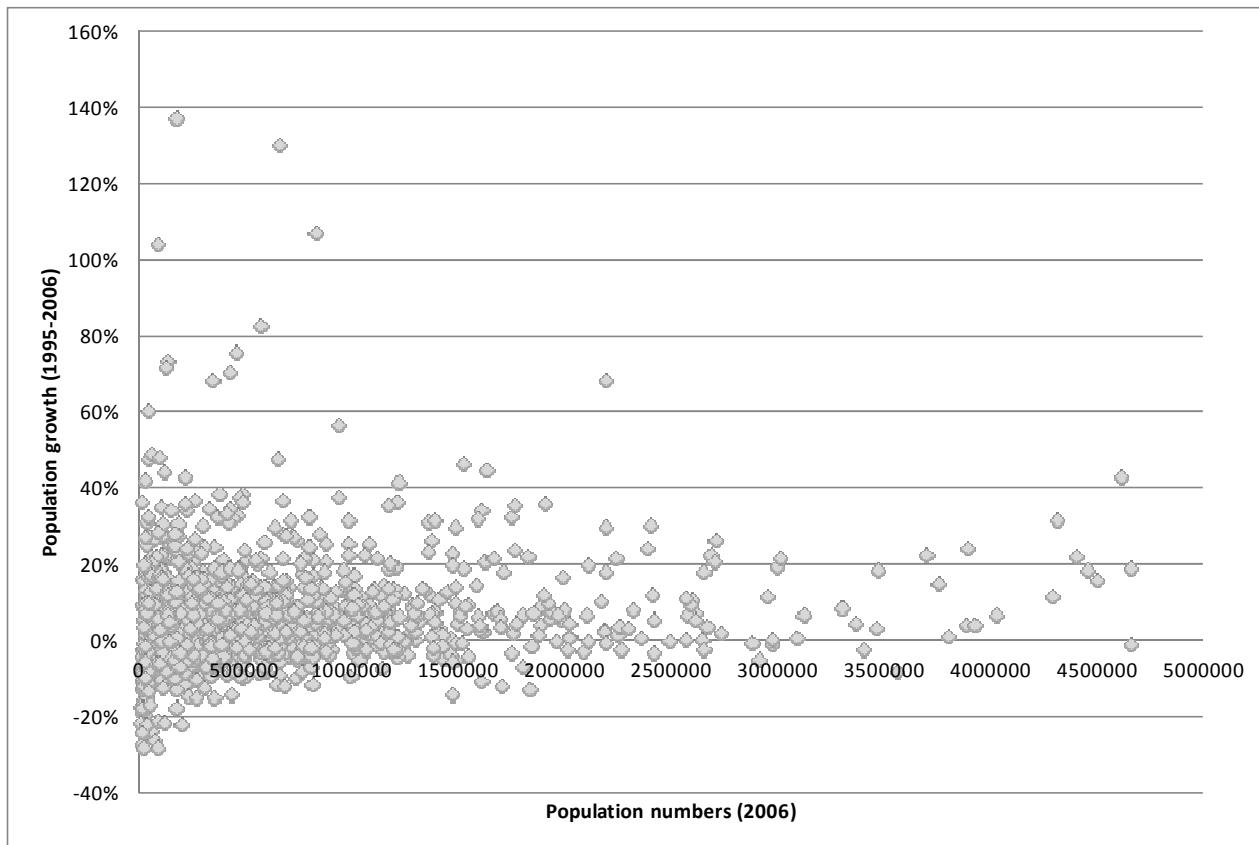
4. Rural cantons in Switzerland, unlike rural regions in several OECD countries, show no de-population trends. The population growth over 1990-2007 is more or less similar for urban (13.6%), intermediate (11.4%) and rural cantons (12.9%) in Switzerland (Table 1). There is a large variety within these three categories of regions. The only canton with some de-population is the predominantly urban canton of Basel-Stadt (-3.7%); other cantons with relatively small population growth rates are the rural cantons of Glarus (1.3%) and Uri (2.0), as well as the intermediate canton of Bern (2.2%). The largest population growth has taken place in the urban canton of Zug (28.5%) and the intermediate canton of Schwyz. Growth rates in predominantly rural cantons are less varied, but solid as well with high population growth rate in the rural canton of Valais (19.7%). Regions in OECD countries show large variation in population growth trends, but the large majority of these TL3-regions show population growth patterns between -20% and +40% over the period 1995-2006. Swiss regions fall in this range: they show no exceptional population growth rates from an international perspective, but show no de-population tendencies in contrast to a substantial number of regions in the OECD, in particular rural and remote regions (Figure 5). Switzerland is in this respect relatively unique: among OECD countries only Belgium,

Ireland and the Netherlands shows less regional de-population tendencies. Apart from strong demographic growth in Switzerland, limited regional de-population might be explained by relatively limited inter-cantonal mobility in Switzerland and a relatively equal distribution of the different age groups over the country.

Table 1. Population growth (1990-2007) in Swiss cantons (%)

	Population growth 1990-2007 (%)
Predominantly urban cantons	
Geneva	13.6
Solothurn	15.9
Basel-Stadt	10.2
Basel-Landschaft	-3.7
Aargau	16.5
Zurich	17.0
Zug	13.3
Intermediate cantons	28.5
Vaud	11.4
Bern	16.1
Fribourg	2.2
Neuchâtel	26.9
Schaffhausen	6.4
Appenzell Ausserrhoden	4.1
St. Gallen	2.7
Thurgau	11.0
Luzern	16.2
Schwyz	13.6
Nidwalden	27.6
Ticino	22.2
Predominantly rural cantons	14.7
Valais	12.9
Jura	19.7
Glarus	5.3
Appenzell Innerrhoden	1.3
Graubünden	11.6
Uri	9.9
Obwalden	2.0
	18.1

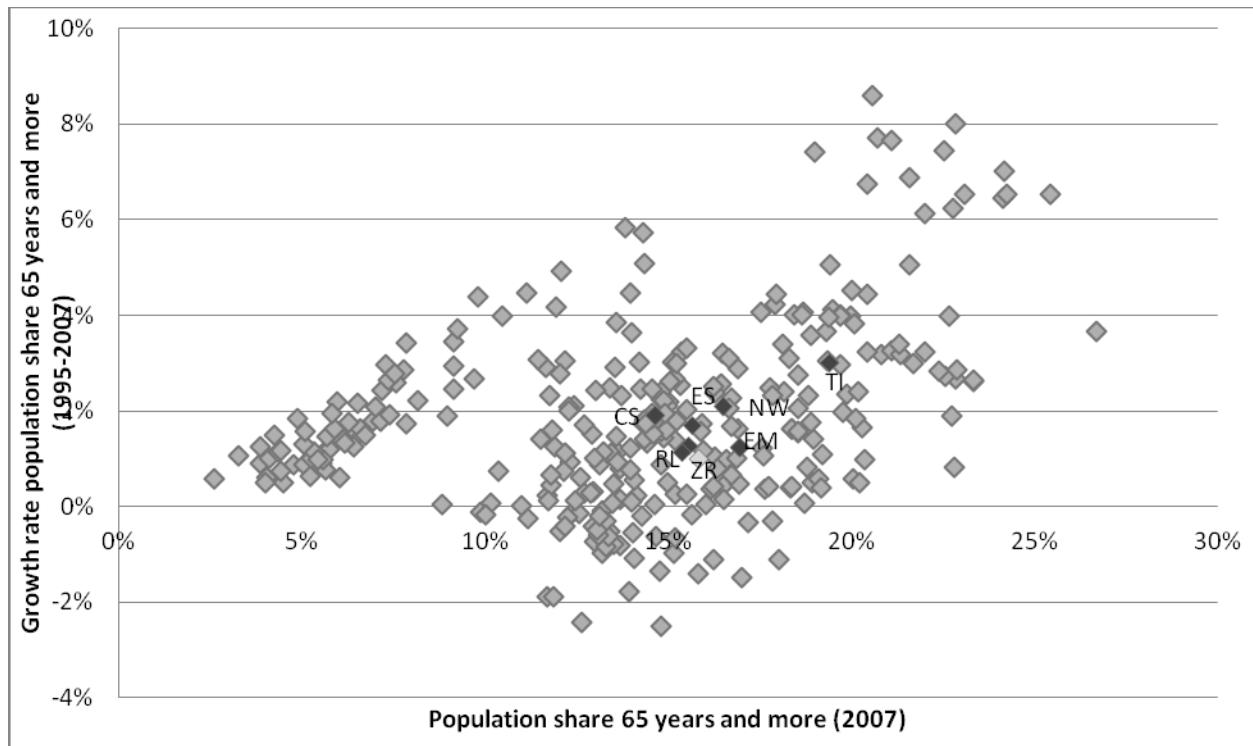
Source: Data from OECD Regional Database.

Figure 5. Population growth (1995-2006) in TL3-regions in the OECD

Source: Data from OECD Regional Database.

5. **Ageing presents a challenge for some Swiss regions, although not more pronounced than in many OECD regions.** At the TL2-level, the region with the highest share of population of 65 years and older is Ticino (19.4% in 2007); this is also the region with the largest increase of elderly population over 1995-2007 (3 percentage points). All other TL2-regions in Switzerland have elderly population shares between 15% and 17% with increases of elderly population between one and two percentage points over 1995-2007 (Figure 6). There is no difference in ageing patterns of different types of regions: the population share of 65 years and older is almost similar in predominantly urban cantons (16.3% in 2008), intermediate cantons (16.7%) and predominantly rural cantons (16.8%). The canton with the highest share of elderly population (65 years and older) is Basel-Stadt (20.7% in 2008), whereas the lowest share of elderly people is found in the intermediate canton of Fribourg (13.6%).

Figure 6. Ageing in TL2-regions in Switzerland and OECD (2007)



Source : OECD Regional Database

Note: The regions indicated in black are the Swiss *Grandes Régions*. The regions in lighter colour are the other TL2-regions in the OECD. TI stands for Ticino, NW for North West Switzerland, EM for Espace Mittelland, ES for Eastern Switzerland, ZR for Zurich, RL for Région Lémanique and CS for Central Switzerland.

1.2.2 Economic specialisations of regions in line with international practice

6. Several economic specialisations in Switzerland, such as agriculture, natural resources, wood products, energy and construction, can be associated with rurality in Switzerland. Rural cantons in Switzerland are in general very specialised in these economic sectors as compared to the national average, intermediate cantons are specialised in these, but to a lesser extent, and urban cantons are generally under-specialised in these sectors, as is the case in most OECD countries. Specialisation is here defined by the employment share of these sectors compared to total cantonal employment, in comparison to the national average employment share in this economic sector. These specialisation tendencies are clearest in agriculture and wood products: all rural cantons are specialised in these sectors, whereas all urban cantons are under-specialised in these.⁵ In addition, rural cantons are generally specialised in hotels and restaurants, generally similarly underrepresented in intermediate and predominantly urban cantons. Predominantly rural cantons, however, are underrepresented in education and arts, whereas intermediate and urban cantons are close to the national average on this (Table 2).

Table 2. Specialisation co-efficients in different types of regions in Switzerland

	Predominantly rural cantons	Intermediate cantons	Predominantly urban cantons
Sectors dominant in more rural cantons			
Agriculture	1.93	1.35	0.46
Natural resources	1.56	1.11	0.78
Wood products	1.65	1.22	0.64
Energy	1.56	0.98	0.92
Construction	1.51	1.04	0.87
Hotels and restaurants	1.87	0.96	0.88
Sectors dominant in more urban cantons			
Research and Development	0.39	0.69	1.44
Financial services	0.52	0.70	1.41
Information and communication	0.41	0.88	1.24
Wholesale trade	0.54	0.87	1.23
Commercial services	0.63	0.88	1.19
Education	0.79	1.00	1.04
Arts	0.80	0.99	1.05
Sectors dominant in intermediate cantons			
Textile industry	0.84	1.40	0.61
Food industry	0.98	1.20	0.79
Machinery	0.69	1.18	0.87
Public administration	0.94	1.16	0.84
Sectors not related to urban-rural distinction			
Electronics and optical instruments	0.89	1.02	1.00
Trade and reparation of cars and motorcycles	1.11	1.04	0.94
Retail trade	1.12	1.05	0.93
Health	0.96	1.05	0.95

Note: A specialisation co-efficient of 1.00 indicates that the rate of local employment in that sector as share of total local employment is exactly the same as the national rate of employment in that sector as share of total national employment. A score higher than 1.00 means that the local employment share in that sector is higher than the national share in that sector: the canton is specialised relative to the national average. A score lower than 1.00 means that the local employment share is lower than the national average: the canton is in that case underrepresented in this sector.

Source: Based on data from Statistics Switzerland.

7. **Economic sectors that are found mostly in urban areas are R&D, financial services, information and communication, wholesale trade and commercial services.** Urban cantons are in general clearly specialised in these sectors, while intermediate cantons are underrepresented in these and rural cantons even more underrepresented in these sectors. This does not mean that all urban cantons have employment shares in these industries that are higher than the national average: in each of the sectors mentioned five of the seven urban cantons were specialised, but two showed employment shares lower than the national average. In several of the sectors mentioned (information and communication, financial services, commercial services) these were cantons that are predominantly urban according to OECD definitions, but more sub-urban in reality (Solothurn and Aargau). In all the above mentioned sectors, rural cantons are systematically under-represented: all of the predominantly rural cantons have employment shares in wholesale trade, information and communication, financial services, commercial services and R&D that are substantially lower than the national average.

8. **Intermediate cantons are also specialised in some of the more traditional economic sectors, such as the textile industry, food industry, machinery and public administration, underrepresented in both urban and rural areas.** There is however some amount of variation between intermediate cantons in these sectors: some of them show specialisation whereas others show under-representation. The sectors in which a clear majority of intermediate cantons is underrepresented are financial services and transport and communication.⁶ A considerable share of economic sectors does not seem to be related to the

distinction between urban and rural areas. This is the case for electronics and optical instruments, trade and reparations of cars and motorcycles, retail trade and health. The average share of employment in these sectors is more or less similar according to predominantly urban, intermediate and predominantly rural cantons.

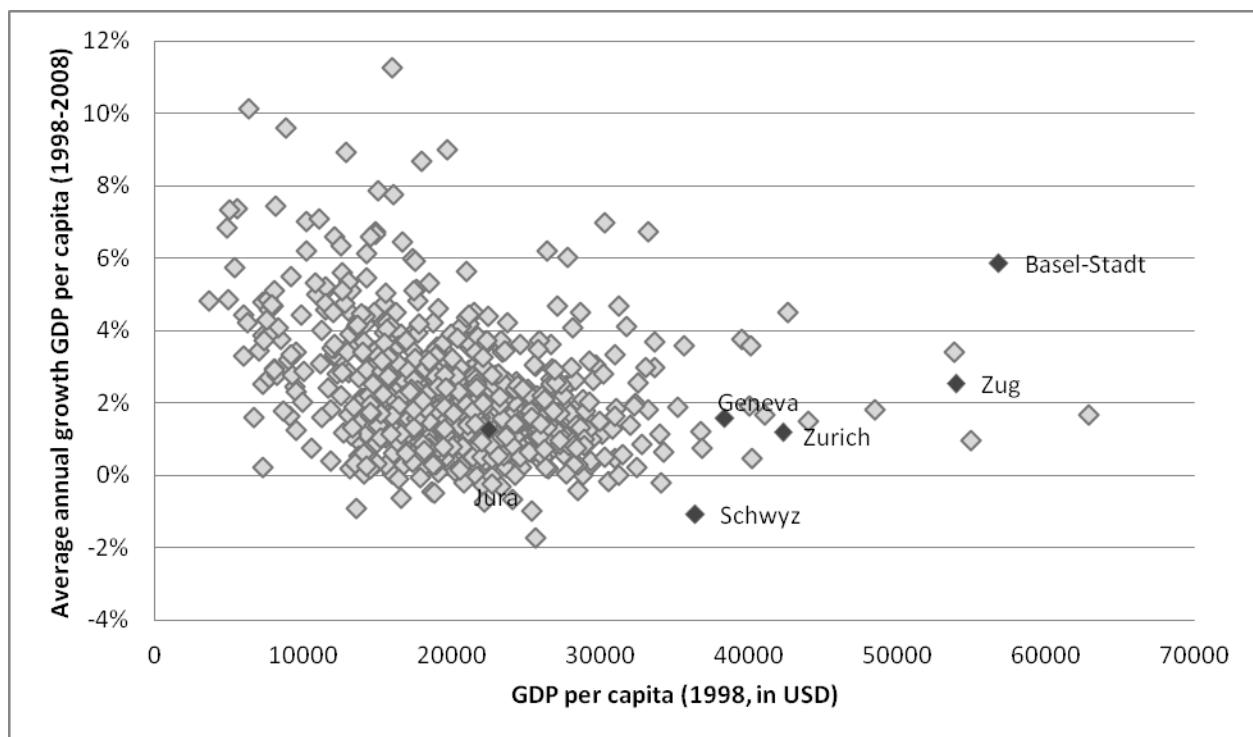
1.3 Strengths and challenges of Swiss regions

1.3.1 Good economic performance of Swiss regions

9. **Swiss regions compare well with regions in other OECD countries on a variety of economic indicators, including GDP per capita and unemployment.** GDP per capita of Swiss regions is higher than a large share of OECD regions, even for the Swiss regions with lowest GDP per capita, such as the Jura. GDP per capita growth for most Swiss regions does not deviate much from the general trend in most OECD countries, although Basel-Stadt managed to realise GDP per capita growth rates over 1998-2007 that were unmatched by OECD regions with the same income level (Figure 7). Unemployment rates are low in Swiss regions, in comparison with regions in OECD countries (Figure 8). In addition to that, regions in Switzerland manage to export a relatively large share of their goods and services.

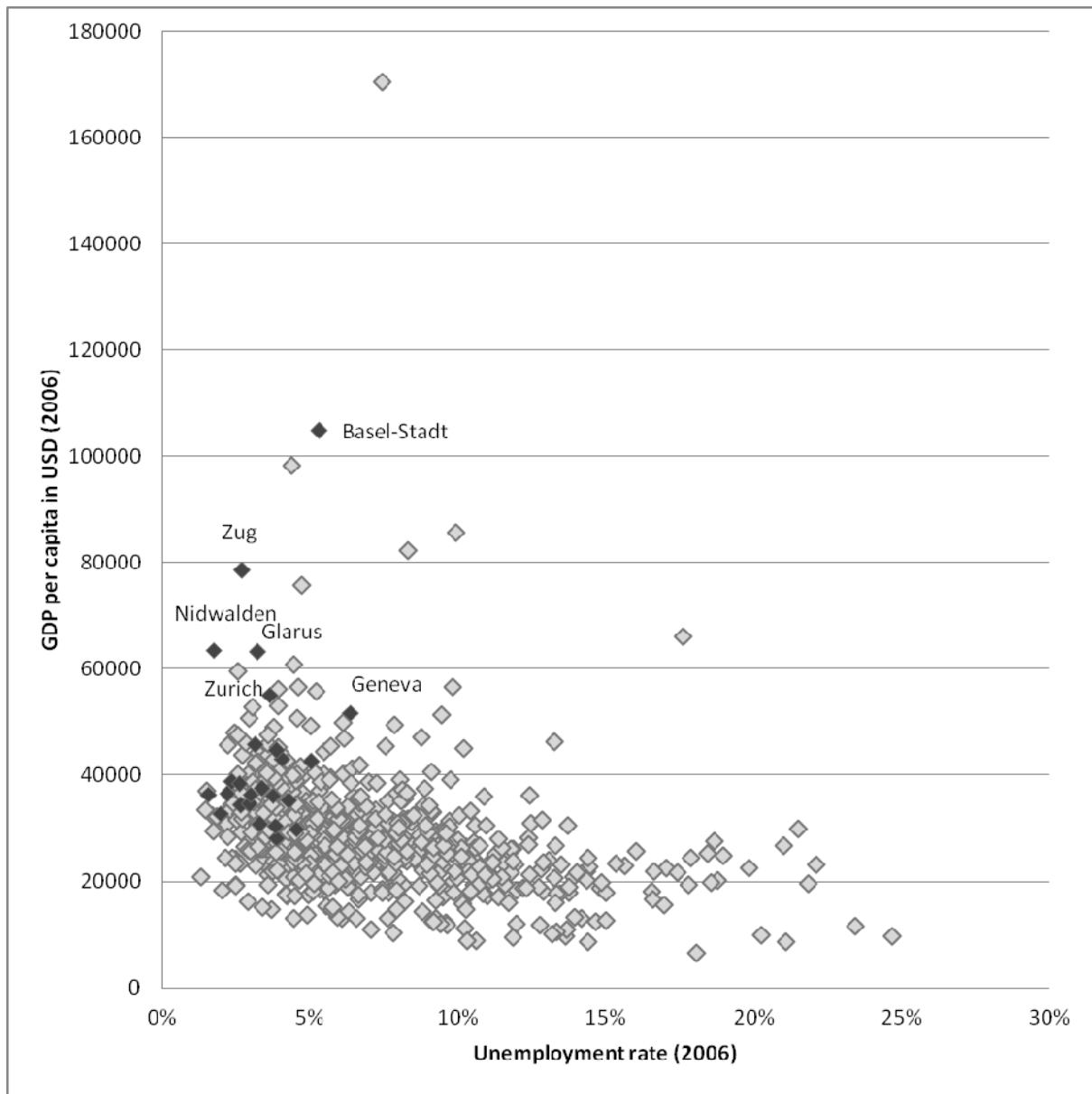
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Figure 7. GDP per capita (1998) and growth of GDP per capita (1998-2007) in OECD TL3-regions



Source: Data from OECD Regional Database. Note: for reasons of visibility, not all cantons in Switzerland are indicated in the figure, but only the cantons with minimum or maximum values (indicated in black).

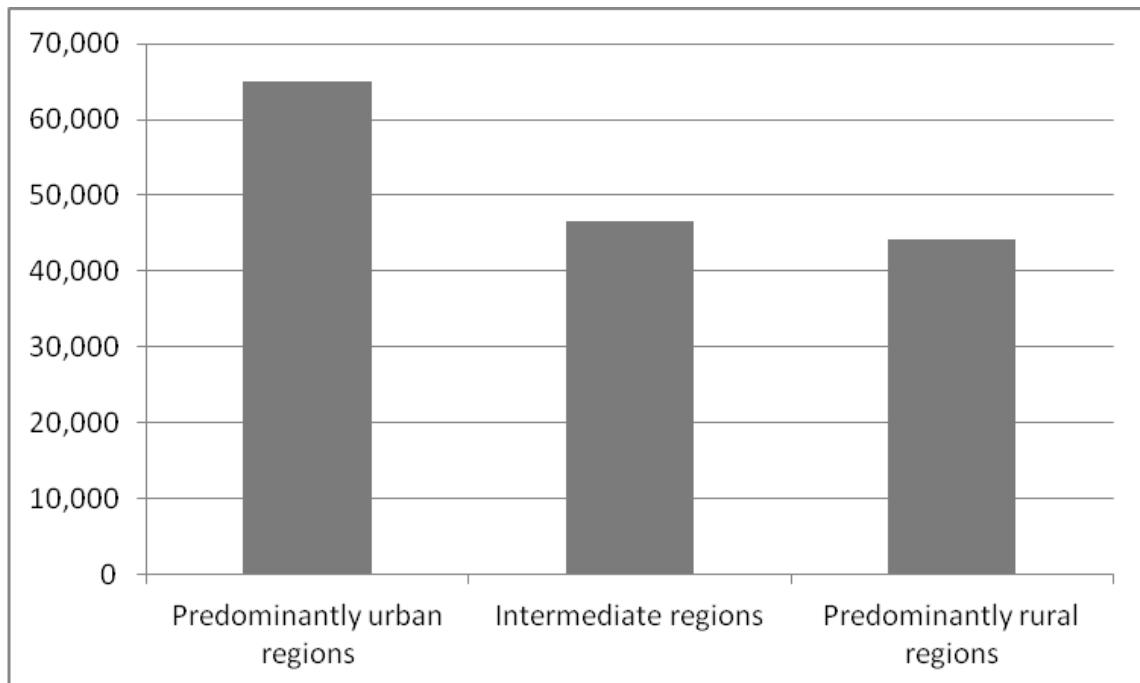
Figure 8. Unemployment rates (2006) in OECD TL3-regions



Source: Data from OECD Regional Database. Swiss cantons are indicated in dark shades.

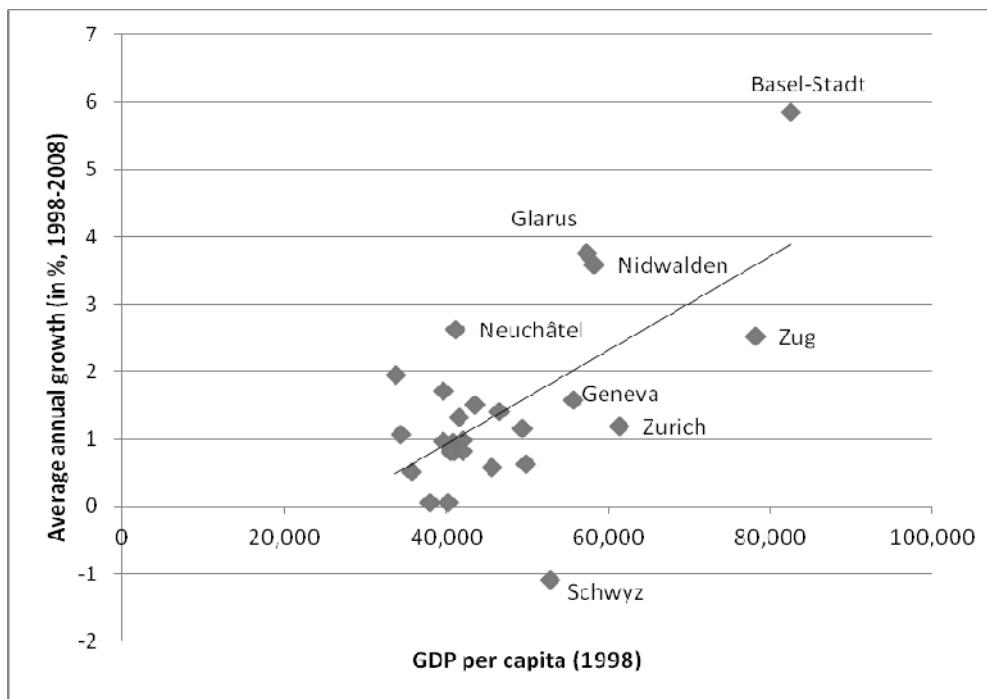
11. **Urban regions in Switzerland have on average considerably higher GDP per capita than other regions in Switzerland.** The average GDP per capita was CHF 65,035 for predominantly urban regions in 2005 (the last year for which GDP per capita data for canton are available); this is CHF 46,651 for intermediate regions and CHF 44,081 for predominantly rural regions (Figure 9). These average numbers are hiding a considerable amount of variety: the predominantly urban canton Basel-Stadt had the highest GDP per capita (115,178), but other predominantly urban cantons have considerably lower incomes (Solothurn had GDP per capita of CHF 46,844 for example), whereas some intermediate (Nidwalden) and predominantly rural regions (Glarus) have attained a level of GDP per capita that is higher than the average for predominantly urban cantons (Nidwalden had GDP per capita of CHF 73,286 and Glarus of CHF 73,236).

Figure 9. Average GDP per capita (in CHF) in different types of regions in Switzerland (2005)



Source: Own calculations based on data from Statistics Switzerland.

12. **Economic growth is also higher in urban regions in Switzerland.** Over 1998-2008, the GDP per capita of predominantly urban regions grew by 15.7%, against 11.2% in intermediate regions and 11.7% in predominantly rural regions. The only canton in Switzerland that witnessed a reduction of GDP per capita in this period was the intermediate canton of Schwyz. The canton with the highest growth in GDP per capita was Basel-Stadt (58.5% growth over 1998-2008). Both Geneva and Zurich witnessed growth of GDP per capita that was smaller than the average for urban regions in Switzerland (Figure 10).

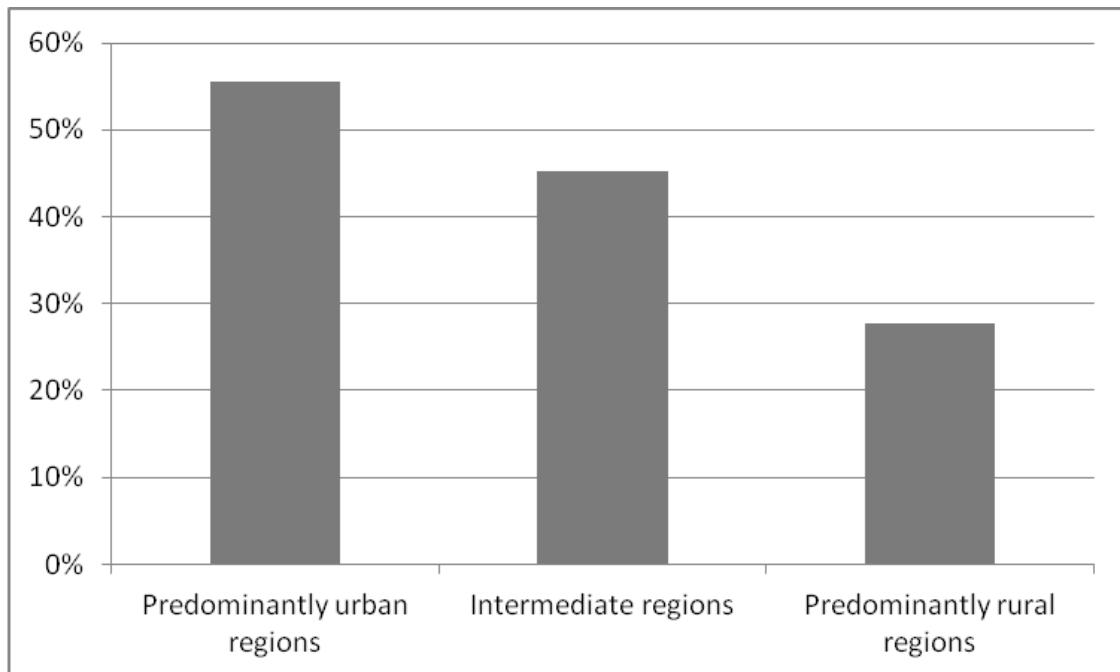
Figure 10. GDP per capita level and growth in Swiss cantons (1998-2008)

Source: Own calculations based on data from Statistics Switzerland.

13. **Unemployment is not more concentrated in rural areas, as is the case in several OECD countries.** As a matter of fact, the unemployment rate in predominantly rural areas in 2006 was lower (at 3.15%) than those in predominantly urban areas (3.96% on average) and intermediate regions (3.91%). The lowest unemployment rate was attained in the predominantly rural region Appenzell Innerrhoden (1.5%), the highest unemployment rate in the predominantly urban region of Genève (6.36%). The unemployment rates in the other main urban centres in Switzerland is above the national average (3.87% in 2006) in the case of Basel-Stadt (5.3%) and slightly below in the case of Zurich (3.64%). (Data from OECD Regional Database).

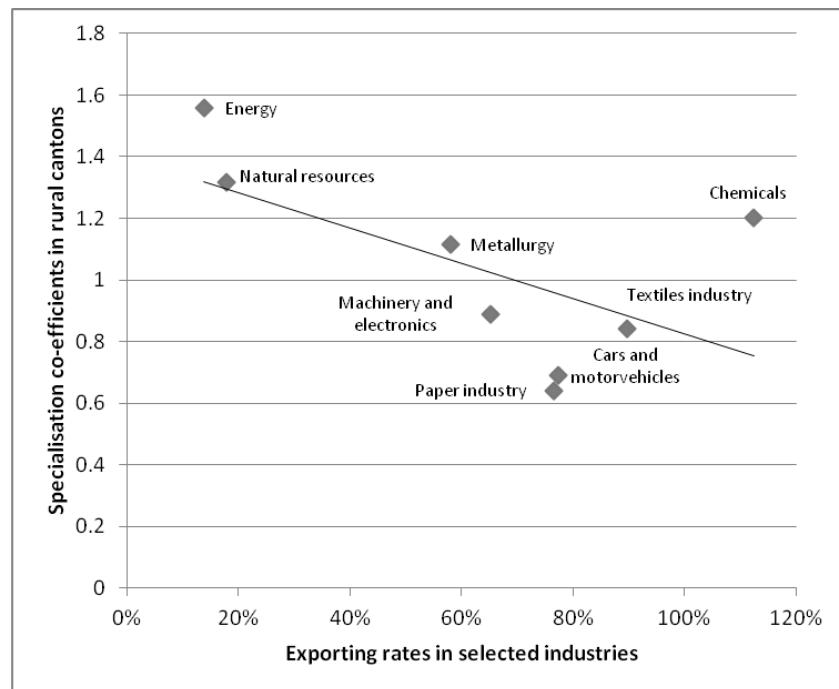
14. **Urban regions have been more successful in exporting than other regions in Switzerland.** On average they exported 55% of their GDP in 2008, whereas export shares were 45% for intermediate regions and 27% for predominantly rural regions in Switzerland (Figure 11). The largest exporters of goods in Switzerland are the urban canton of Basel-Stadt, with an export share of 188% of GDP, and the intermediate canton of Neuchâtel (export share of 106% in 2008). Zurich is a relatively small exporter of goods (although it has a strong position in exporting services, such as financial and business services) in relative terms (22% of GDP in 2008), but the lowest export share is reached in the predominantly rural region of Appenzell Innerrhoden (15%) (based on data from UBS Suisse, 2009). These exporting patterns are to some extent related to economic specialisations of different regions in Switzerland. Rural cantons are specialised in economic sectors that in general have slightly lower exporting rates (Figure 12, 13, 14).

Figure 11. Export shares of different types of regions in Switzerland

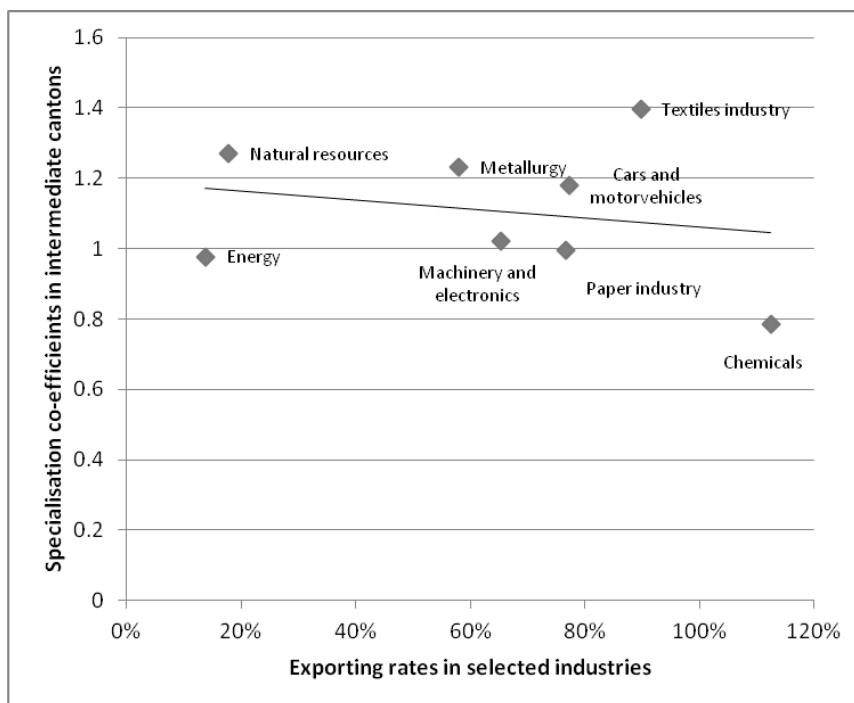


Source: own calculations based on data from Statistics Switzerland.

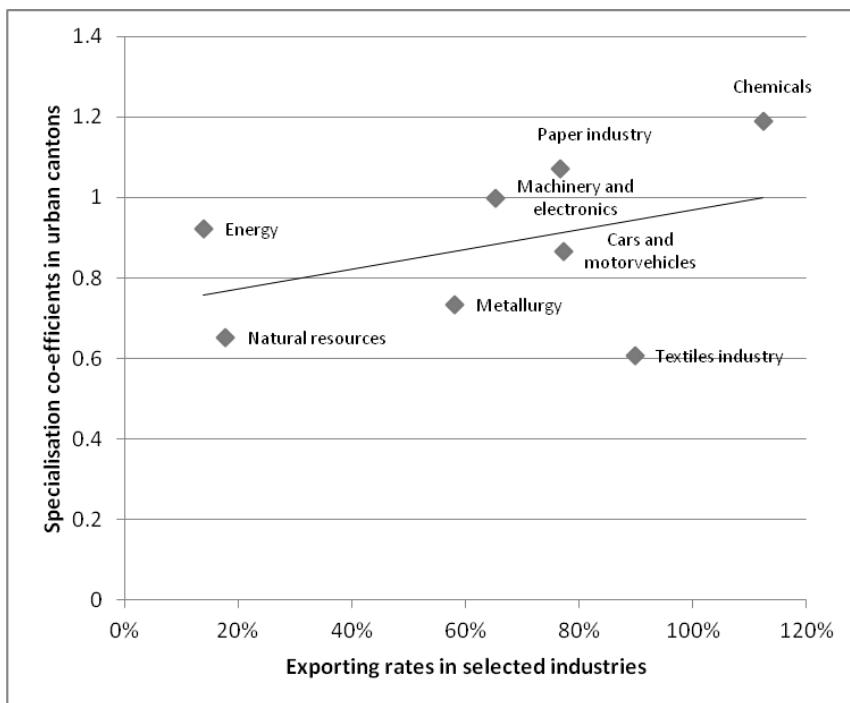
Figure 12. Sectoral specialisation and exporting rates in rural cantons



Source: Based on data from Statistics Switzerland

Figure 13. Sectoral specialisation and exporting rates in intermediate cantons

Source: Based on data from Statistics Switzerland.

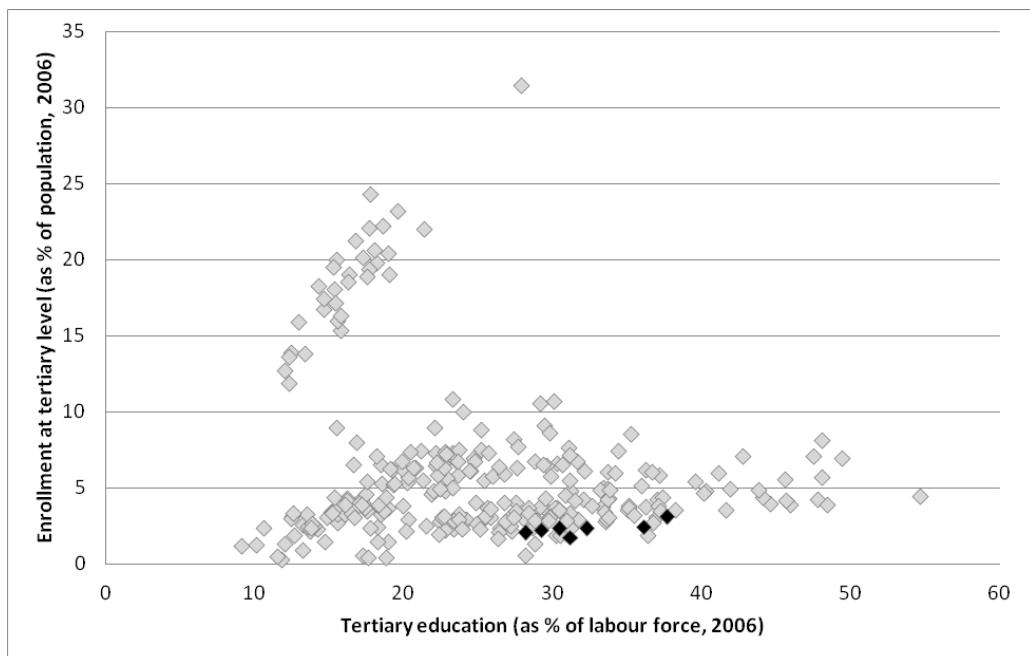
Figure 14. Sectoral specialisation and exporting rates in urban cantons

Source: Based on data from Statistics Switzerland.

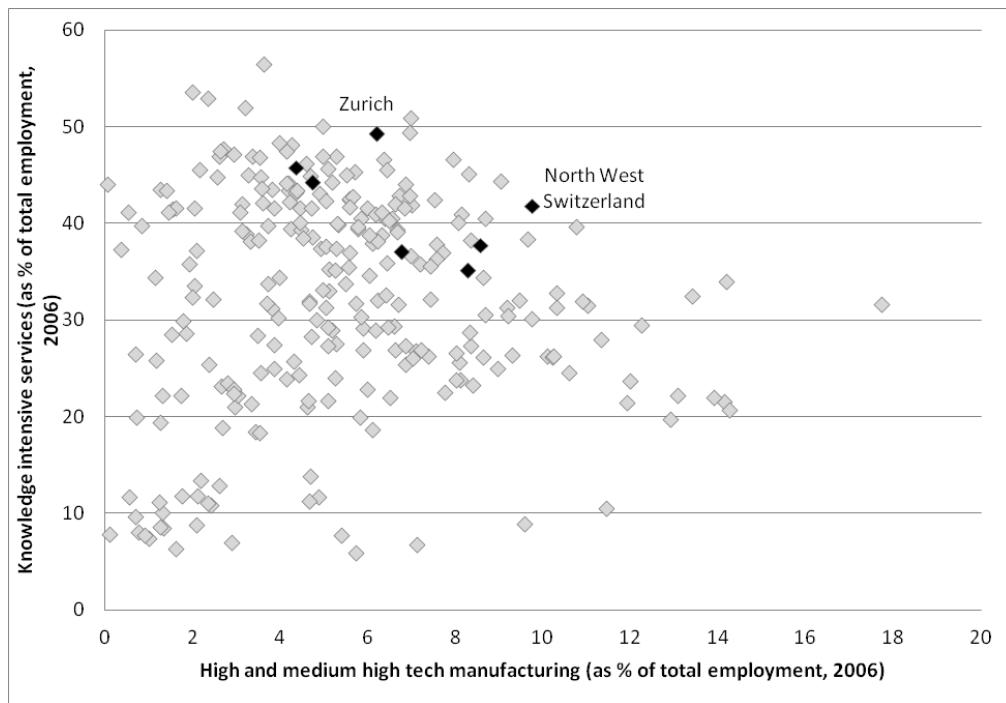
1.3.2 Strongly developed human capital and innovation

15. **The labour force in Swiss regions is highly qualified and employment is highly knowledge intensive.** In comparison with regions in the OECD, a large share of the labour force in Swiss regions has tertiary education, in particular in Région Lémanique (36.1% in 2006) and Zurich (37.7%) (Figure 15). This highly skilled labour force is comfortably absorbed due to the high shares of knowledge intensive jobs in Swiss *Grandes Régions*, especially in Zurich (knowledge intensive services) and North West Switzerland (where a large share of the employment is classified as “high and medium high tech manufacturing”). Around 49% of total employment in Zurich consists of knowledge intensive services; only very few regions in the OECD have a higher share of these (including Stockholm, London and New York) (Figure 16). North West Switzerland is scoring relatively high on the share of high and medium high tech manufacturing (9.8% in 2006), although some regions are considerably more dominant in these sectors (e.g. Baden-Wuerttemberg with a share of 17.7% high and medium high tech manufacturing). Other Swiss regions with high scores on high tech manufacturing (East Switzerland and Espace Mittelland) score relatively lower on knowledge intensive services employment.

Figure 15. Tertiary education attainment in Swiss regions (2006)



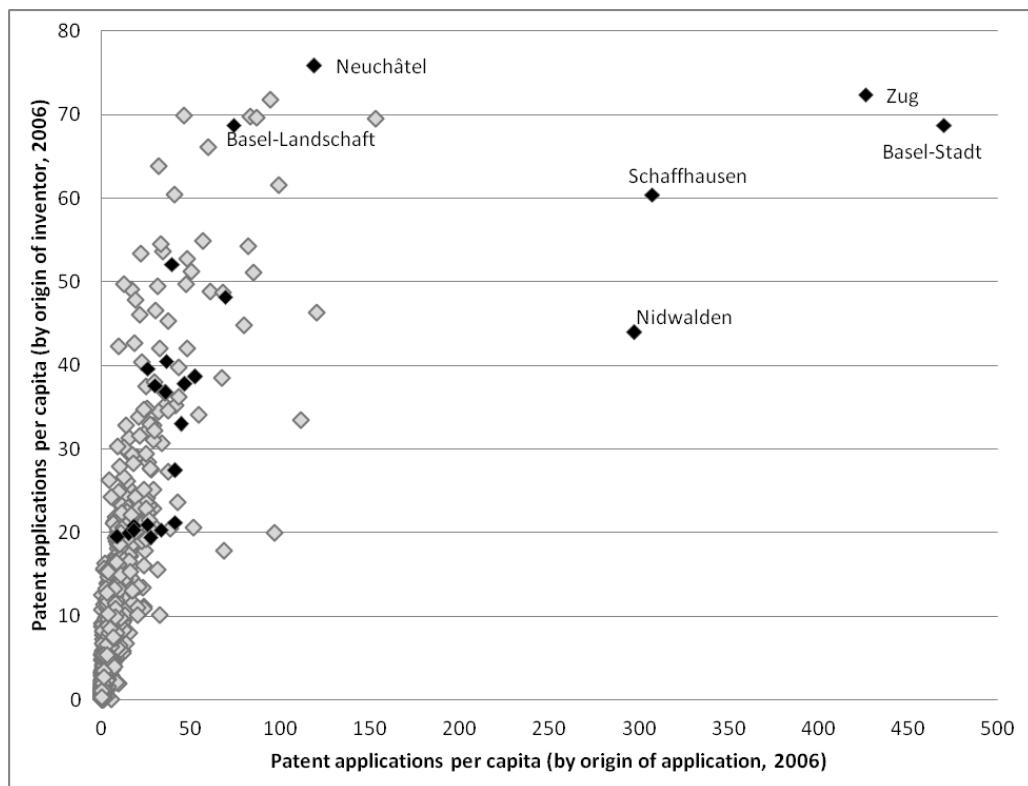
Source: OECD Regional Database. Note: The regions indicated in black are the Swiss *Grandes Régions*. The regions in lighter colour are the other TL2-regions in the OECD.

Figure 16. High tech manufacturing and knowledge intensive services employment in OECD regions

Source: OECD Regional Database. Note: The regions indicated in black are the Swiss *Grandes Régions*. The regions in lighter colour are the other TL2-regions in the OECD.

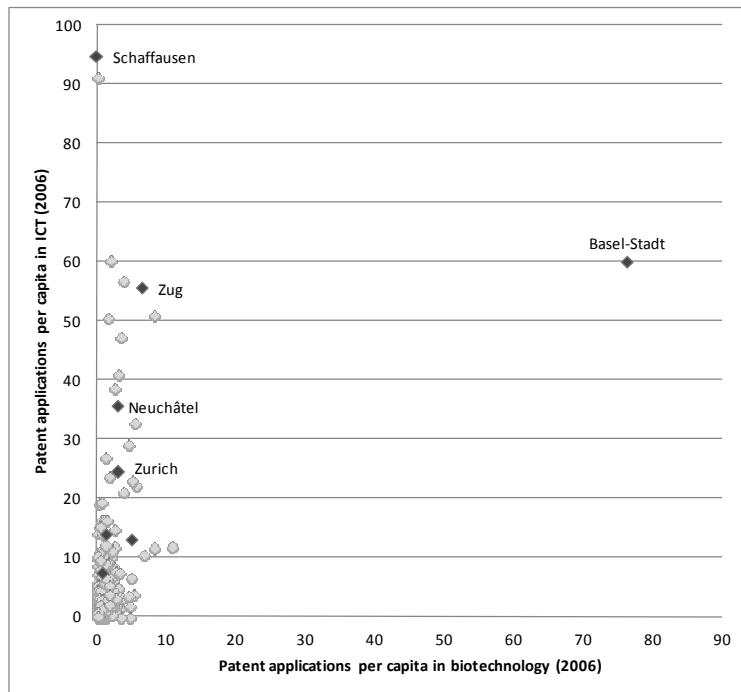
16. **Regions in Switzerland score very high on patent applications.** This is the case both when the origin of the application or the origin of the inventor is taken as the base. The ten leading cantons in Switzerland all belong to the leading OECD regions in this respect; these are cantons such as Basel-Stadt, Zug, Schaffhausen and Neuchâtel (Figure 17). Other cantons in Switzerland score lower on this indicator, but still considerably higher than many other regions in the OECD. High patent applications could indicate a high capacity to transform knowledge into inventions that can be commercialised. Several regions in Switzerland are leading innovators in sectors such as biotechnology, ICT and green technologies (Figure 18 and 19). Basel was applying for eight times more biotechnology patents per capita in 2006 than the other leading regions in the OECD. Together with Schaffhausen, Zug, Neuchâtel and Zurich, it is also one of the leading regions ICT patent applications per capita. Swiss regions are also at the forefront of inventions in green technologies, such as energy efficiency and pollution abatement. Appenzell Ausserrhoden and Zug score very high on patent applications per capita in energy efficiency in buildings and lighting, whereas Aargau, Obwalden, St. Gallen and Basel-Stadt are amongst the leaders in pollution abatement and waste management.

Figure 17. Patent applications per 100 000 inhabitants in OECD TL3-regions (2006)

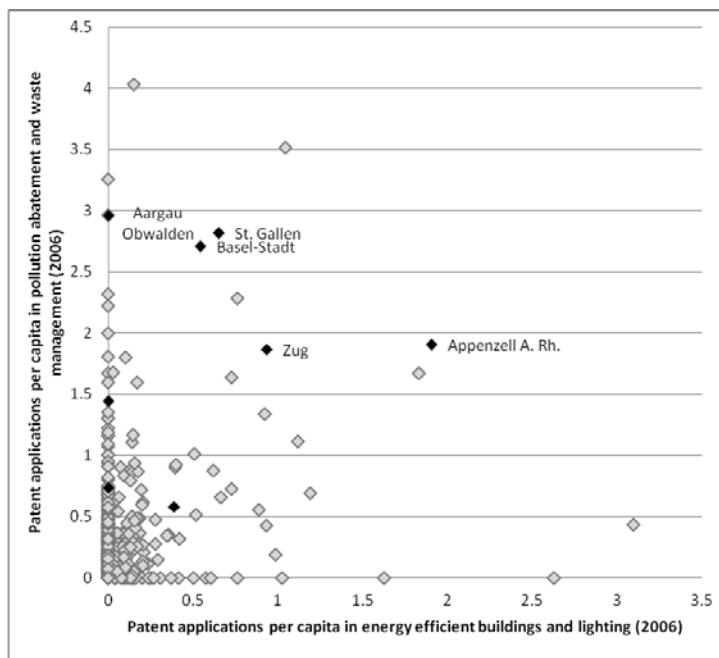


Note: The regions indicated in black are the Swiss cantons. The regions in lighter colour are the other TL3-regions in the OECD.

Source: Own calculations based on data from Statistics Switzerland and the OECD Patent Database.

Figure 18. Patent applications per 100 000 inhabitants in biotechnology and ICT (2006)

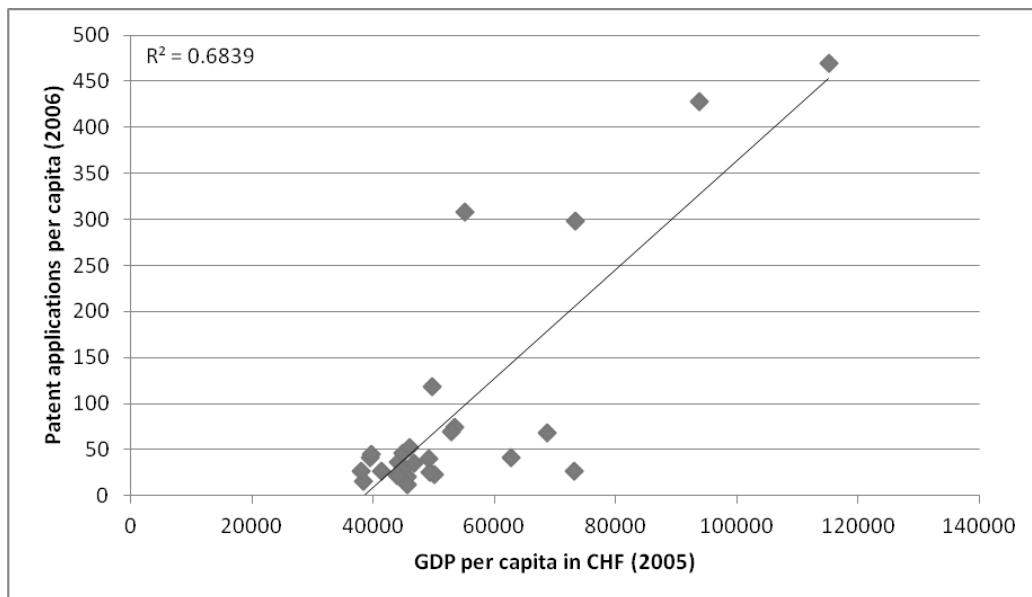
Source: Own calculations based on data from the OECD Patent Database and OECD Regional Database. Note: The regions indicated in black are the Swiss cantons. The regions in lighter colour are the other TL3-regions in the OECD.

Figure 19. Patent applications per 100 000 inhabitants in green technologies (2006)

Source: Own calculations based on data from the OECD Patent Database and OECD Regional Database. Note: The regions indicated in black are the Swiss cantons. The regions in lighter colour are the other TL3-regions in the OECD.

17. **Urban regions in Switzerland have considerably more patent applications than other regions in Switzerland.** Half of all patent applications in Switzerland in 2006 came from predominantly urban regions; also in relative terms predominantly urban cantons have more patent applications: 93.4 patents per 100,000 inhabitants in 2006, against 48.5 in intermediate regions and 22.2 in predominantly rural cantons. In absolute terms most patent applications originated from the predominantly urban cantons of Zurich (870 in 2006) and Basel-Stadt (869). The cantons with the highest share of patent applications per inhabitant are the predominantly urban cantons of Basel-Stadt (469 per 100,000 inhabitants in 2006), Zug (428) and the intermediate canton of Nidwalden (298). Patent applications per capita in Switzerland are correlated with GDP per capita: richer cantons tend to have more patent applications. It has not been possible to establish the direction of causality of this relationship (Figure 20).

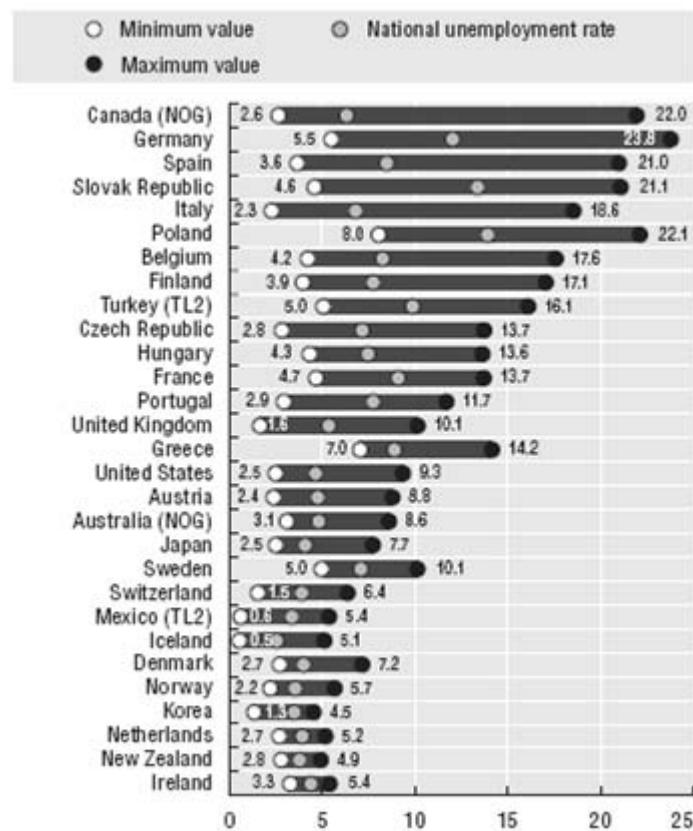
Figure 20. Relation between patents and GDP per capita in Swiss cantons (2006)



Source: Own calculations based on data from Statistics Switzerland and the OECD Patent Database.

1.3.3 Relatively limited inter-regional disparities

18. **The differences between regions in Switzerland are relatively small in comparison with OECD countries.** Switzerland is one of the OECD countries with the lowest regional differences in employment growth, with a range from 0% to 2% (only Denmark and Belgium had smaller differences in this respect). Regional differences in unemployment rates ranged from 1.5% to 6.4%, which is relatively low compared to most OECD countries (Figure 21). The Gini index of TL3 regional unemployment rates in Switzerland is similar to the OECD average. Regional variation in long-term unemployment rates in 2006 was relatively low in Switzerland. Regional differences in (age-adjusted) mortality rates in Switzerland are among the lowest in OECD countries and the regional variation in the number of physicians per 1000 inhabitants is one of the lowest among OECD countries.

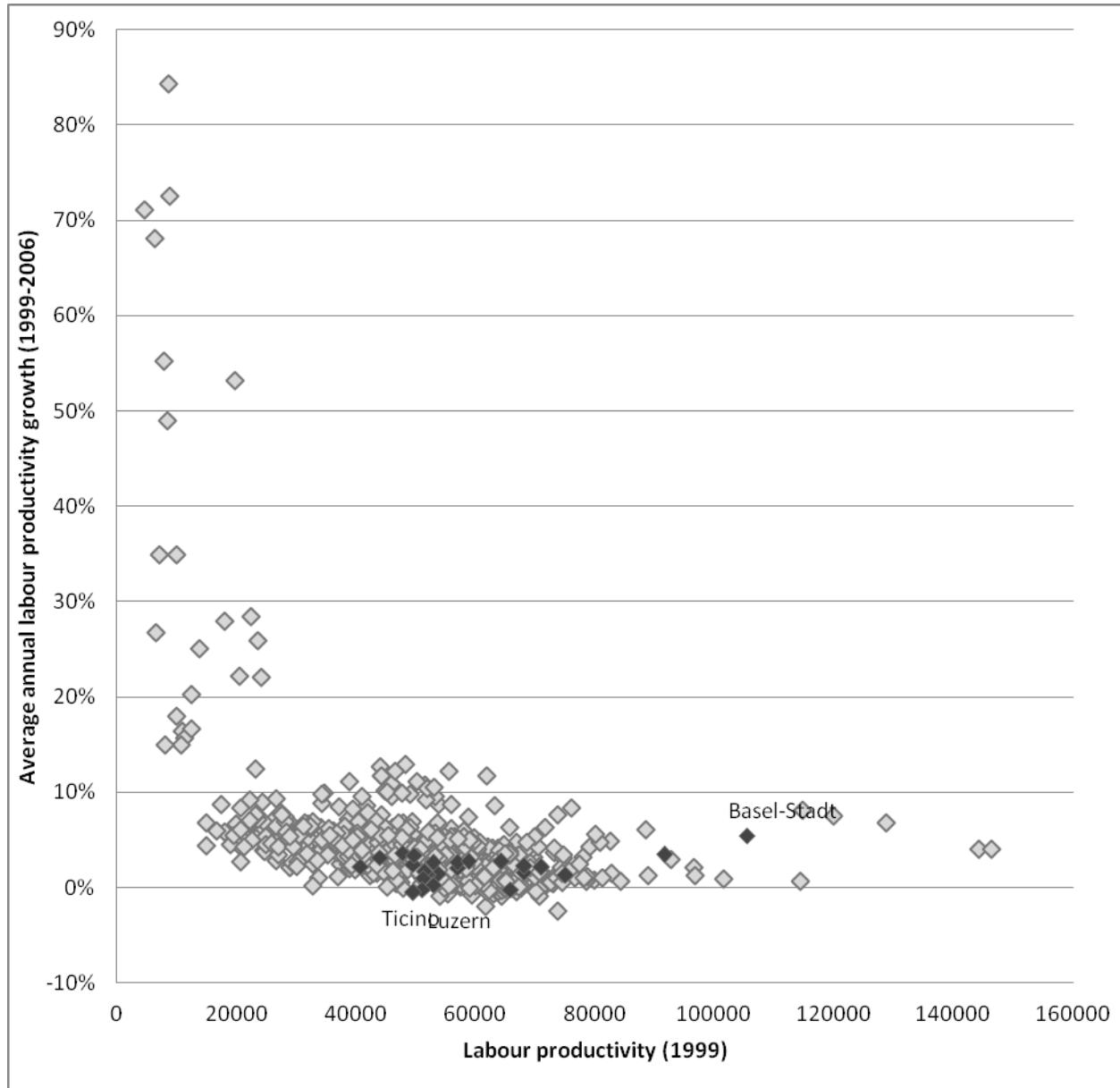
Figure 21. Regional variation (TL3) in unemployment rates (2006)

Source: OECD Regions at a Glance 2009.

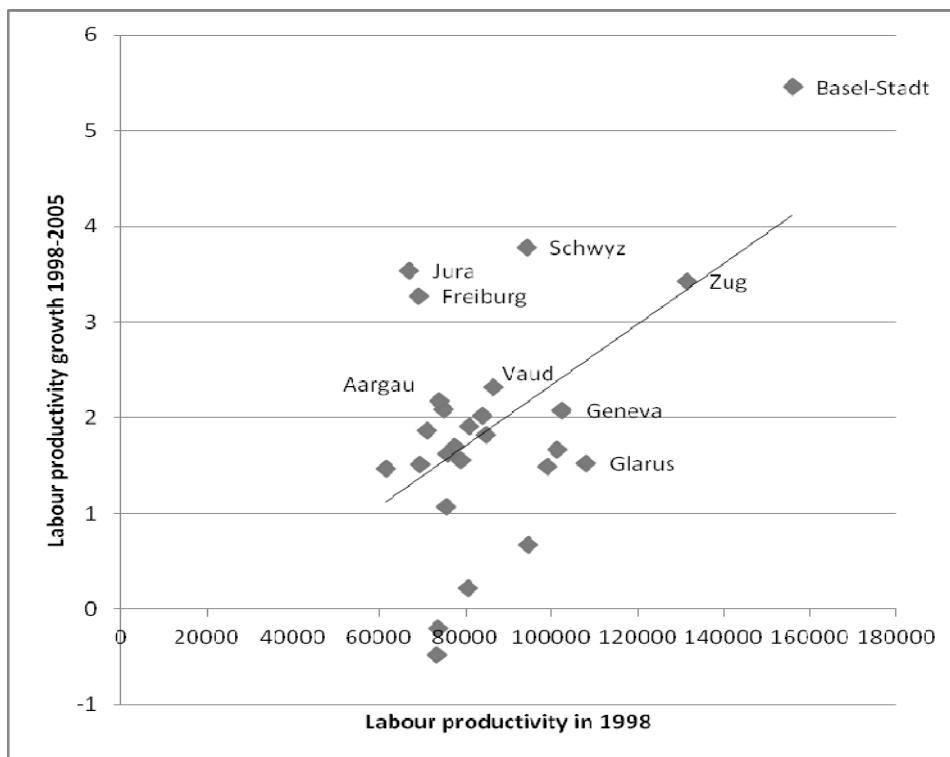
1.3.4 Regional labour productivity as a main concern

19. **Despite strong performance on several economic indicators, several Swiss regions lag with respect to labour productivity growth.** With the exception of the cantons of Basel-Stadt and Zug, most cantons in Switzerland show productivity growth rates that are relatively low in comparison with other OECD regions, even those with equivalent income levels. The growth in labour productivity over 1998-2005 was on average 2.2% in predominantly urban regions, against 1.7% in intermediate regions and 1.5% in predominantly rural regions, which is well below growth rates in many OECD regions (Figure 22). Although there is a difference in productivity growth rates of 5.7 percentage points between the lowest and highest performing canton in Switzerland, this difference is not exceptional as compared to the variation in regional productivity growth rates in OECD countries.⁷

Figure 22. Labour productivity (2006) and labour productivity growth (1999-2006) in OECD TL3-regions



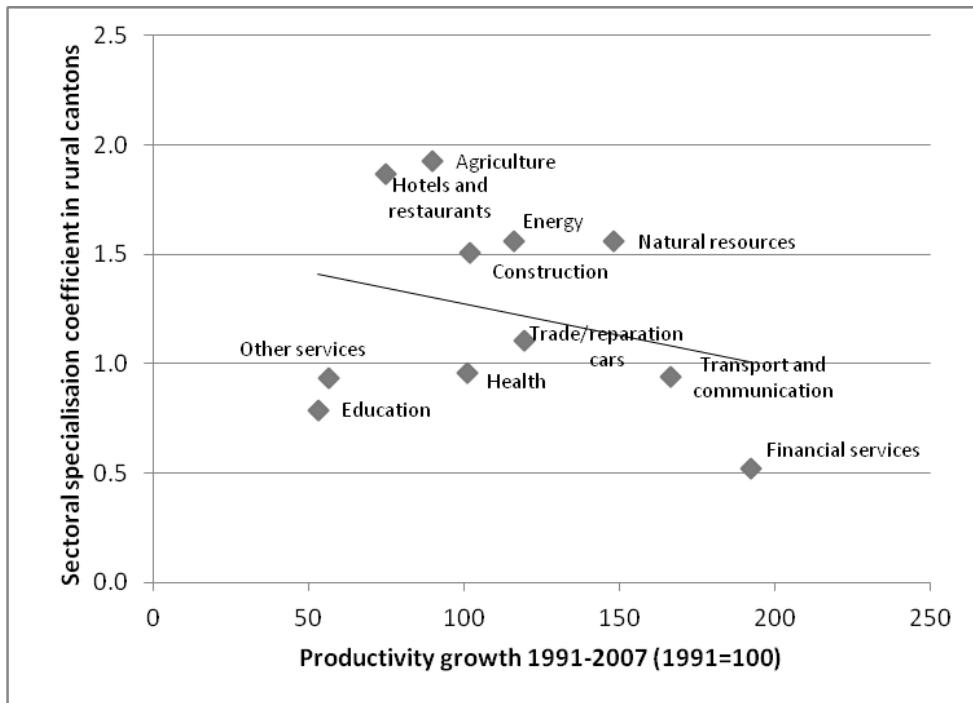
Source : Own calculations on the basis of OECD Regional Database

Figure 23. Labour productivity: level and growth in Swiss cantons (1998-2005)

Source: own calculations based on data from Statistics Switzerland

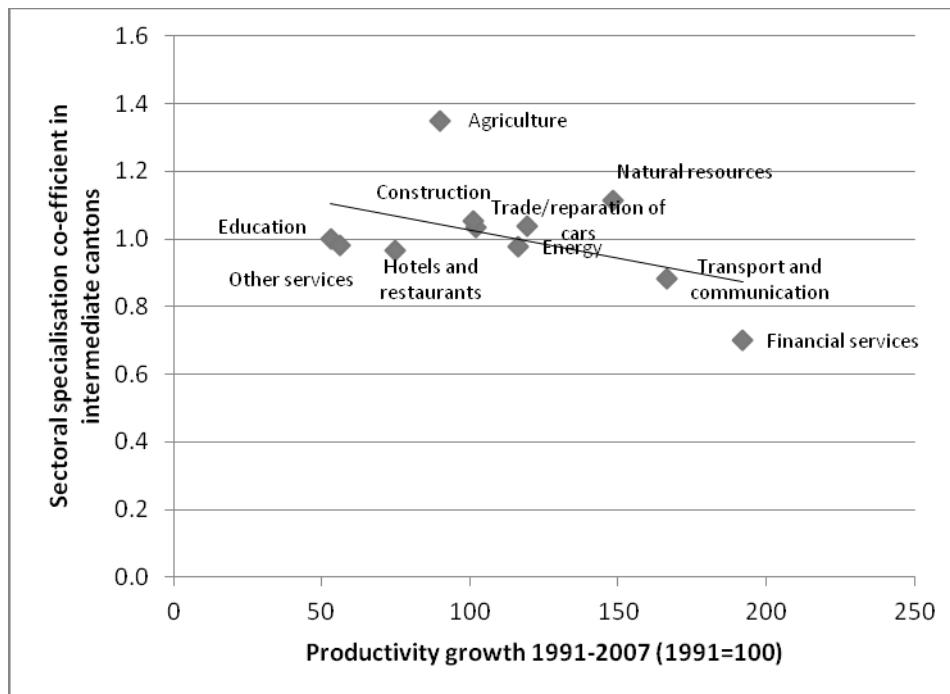
20. **Part of the productivity growth differences between regions can be explained by different regional economic specialisations.** Predominantly rural cantons have strong specialisations in some economic sectors that have witnessed low labour productivity growth (even productivity loss) such as agriculture and hotels and restaurants and under-representation in sectors with strong productivity growth such as financial services and transport and communication. These effects are to some extent compensated by specialisations in other sectors with high productivity growth (natural resources and energy) and under-representation in sectors that also had productivity losses, such as education (Figure 24). On the whole, however, there is a slight negative relationship between the economic specialisations of rural areas in Switzerland and productivity growth in these sectors. There is a similar negative relationship for intermediate regions: although their specialisation patterns are not the same as those of rural areas, intermediate regions tend to be more specialised in economic sectors with low productivity growth (Figure 25). The opposite is the case for urban areas: they are highly specialised in the sectors that tended to show the highest productivity growth over 1991-2007 (financial services, transport and communication), whereas they are under-represented in sectors with low productivity growth, such as agriculture, hotels and restaurants, and construction (Figure 26).

Figure 24. Sectoral specialisation and productivity growth in rural cantons

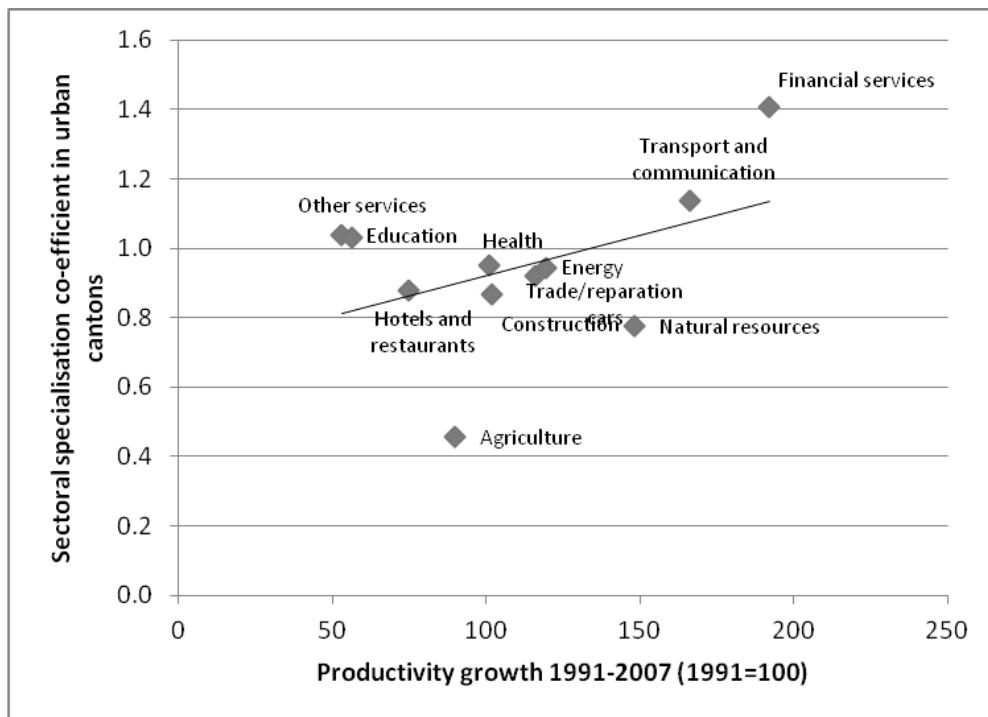


Source : Based on data from Statistics Switzerland

Figure 25. Sectoral specialisation and productivity growth in intermediate regions



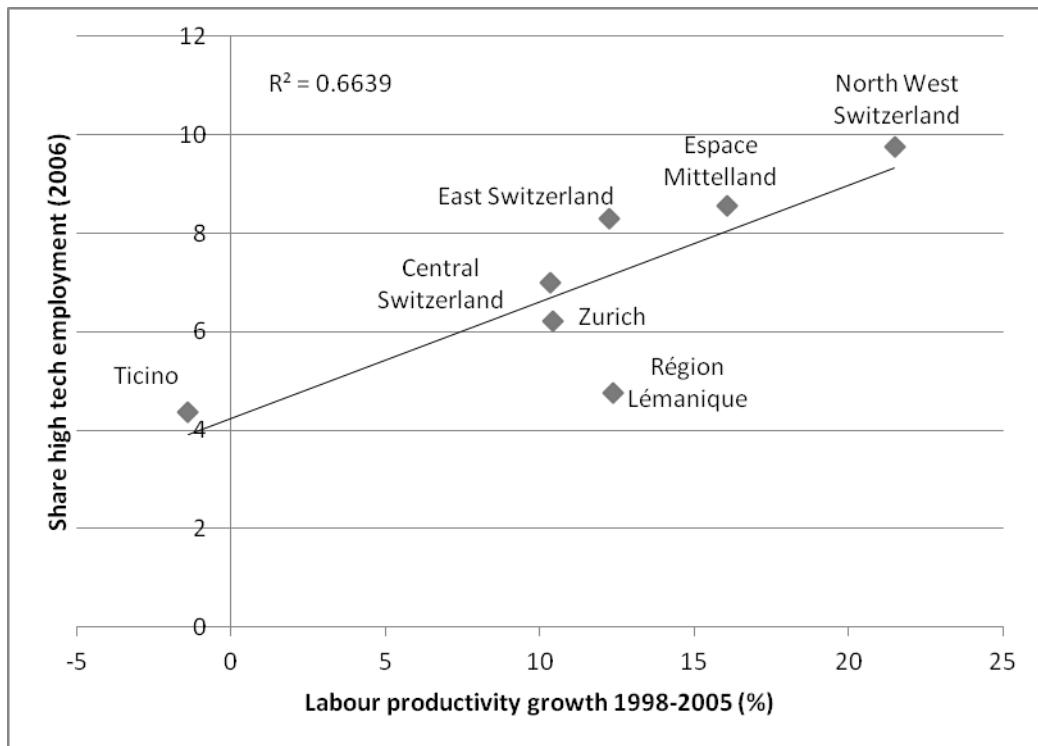
Source : Based on data from Statistics Switzerland

Figure 26. Sectoral specialisation and productivity growth in urban cantons

Source : Based on data from Statistics Switzerland

21. In addition, there is a strong correlation between the share of high and medium high tech employment in 2006 and the productivity growth over 1998-2005 in the seven *Grandes Régions* (TL2-level) in Switzerland (Figure 27). In addition, there are marked differences in productivity growth patterns in different economic sectors. The primary sector witnessed a productivity loss of 10.2% over 1991-2007, whereas the secondary sector grew more productive by 41.8% over the same period (16% for the tertiary sector). These differences are even larger on a lower sectoral aggregation level, with large productivity gains in insurance (+104%), financial services (+80%), transport and communication (+66%) and the manufacturing industry (+59%). Large productivity losses took place in education (-47%) and hotels and restaurants (-25%). As these sectoral data are not disaggregated at cantonal level or the level of *Grandes Régions*, it is not possible to establish their interrelation with productivity growth at cantonal level or at the level of *Grandes Régions*.

Figure 27. Productivity growth and high tech employment in Swiss *Grandes Régions*



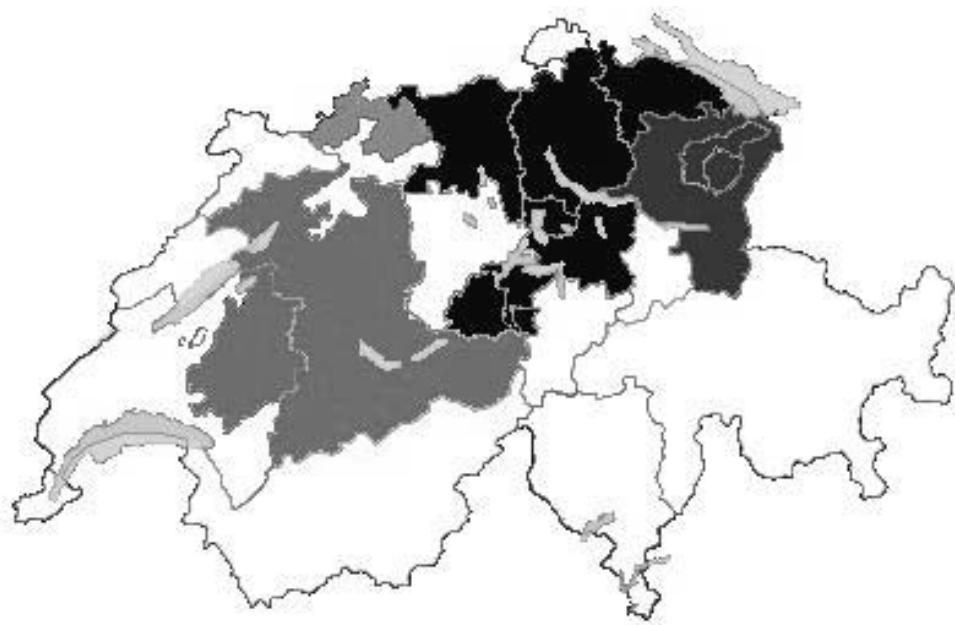
Source: own calculations based on data from Statistics Switzerland and OECD Regional Database

1.4 Inter-linkages between regions

22. **Analysis of interlinkages between regions can provide indications to what extent administrative boundaries reflect functional realities.** These functional realities refer to the way people and firms behave in space. Functional regions are those areas in which most vital activities of people take place, such as living, working, consumption and production, as well as those of firms, such as where they get the inputs for their production process (such as labour, knowledge, materials and intermediary products). Functional regions can be linked by commuting patterns, trade flows, travel for recreation and entertainment. They could also be determined by shopping regions centered on malls or supermarkets, area served by branch banks, and ports and their hinterlands. Functional regions in many cases do not reflect administrative boundaries or intergovernmental (inter-cantonal or inter-municipal) cooperative arrangements (for example in economic promotion or other areas). For reasons of data limitations, four indicators of functional regions will be looked at in this Review: i) commuting flows, ii) continuity in economic specialisations, iii) knowledge spillovers and iv) business linkages. The datasets used in this analysis take the canton as unit of analysis. Although the analysis is thus not able to determine in great precision the boundaries of functional areas (as they might encompass whole cantons but only parts of other cantons), they give an indication of the extent to which functional regions in Switzerland cross cantonal boundaries. A very precise demarcation of functional regions would also be illusory as they would differ per criterion used.

i) *Commuting*

23. **Commuting flows indicate the existence of at least three large metropolitan labour markets in Switzerland.** Commuting forms one of the elements of the OECD definition for functional metropolitan regions: neighbouring regions that have a net commuting rate of 10% or higher are in this definition considered to be one functional labour market area. In 2000, Switzerland counted 12 cantons with a net commuting rate higher than 10% (that is higher than 10% or lower than -10%). They make up three different integrated labour markets: one around Basel, Bern and Zurich (Figure 28).⁸ Net commuting flows in the other cantons do not exceed the threshold of 10% and can thus be considered to contain one (or more) integrated labour markets. This might be a question of time: the inter-cantonal commuting flows have increased between 1990 and 2000, raising the number of cantons with net commuting rates above 10% from 9 to 12. Commuting data for 2010 are not yet available, but might confirm the increased tendency of inter-cantonal commuting (Table 3). Although there are substantial commuting flows from Vaud to Geneva, these commuting flows are not large enough to qualify as a functional labour market area. If gross commuting rates would be taken into account, rather than net commuting rates, the picture remains the same. Outward commuting rates higher than 10% of the cantonal labour force occur in those cantons that also have net commuting rates higher than 10% (or more accurately, lower than -10%).

Figure 28. Functional labour market areas in Switzerland (2000)

Source: Own calculations based on data from Statistics Switzerland.

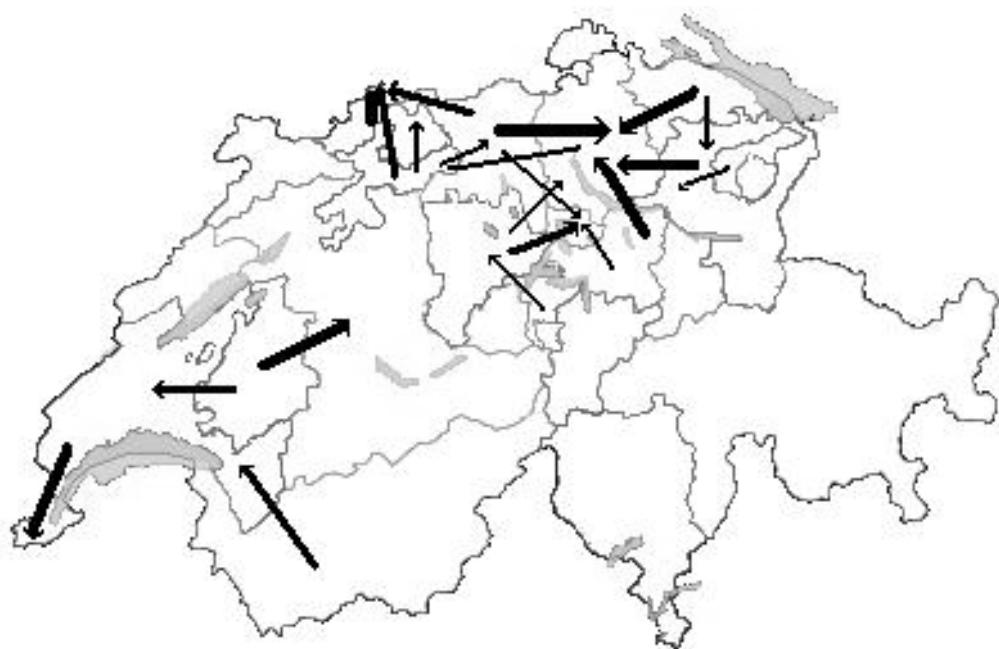
Table 3. Net commuting rates in Swiss cantons

	1990	2000
Zurich	9.8%	11.8%
Aargau	-12.5%	-13.5%
St. Gallen	0.3%	0.0%
Thurgau	-10.6%	-13.2%
Schwyz	-16.9%	-19.2%
Schaffhausen	-4.9%	-7.5%
Zug	13.4%	17.8%
Luzern	-2.5%	-1.8%
Solothurn	-5.7%	-9.0%
Berne	1.2%	2.5%
Basel-Stadt	41.5%	43.2%
Basel-Landschaft	-24.1%	-20.1%
Glarus	-1.8%	-3.2%
Graubünden	-1.3%	-1.4%
Vaud	-3.6%	-3.5%
Fribourg	-9.1%	-12.2%
Appenzell Ausserrhoden.	-14.6%	-15.7%
Nidwalden	-13.2%	-17.7%
Ticino	0.6%	0.4%
Genève	7.8%	8.9%
Valais	-1.8%	-4.0%
Uri	-4.6%	-9.2%
Obwalden	-7.4%	-10.5%
Neuchâtel	0.0%	-0.3%
Appenzell Innerrhoden	-13.7%	-16.6%
Jura	-6.3%	-8.7%

Source: Own calculations based on data from Statistics Switzerland.

24. **Commuting data also indicate poly-centrality and large cross-border flows.** Although Zurich is still the main employment magnet, other urban cores, such as Zug and St. Gallen attract considerable number of commuters (Figure 29). Although the Aargau canton shows out-commuting to both Basel and Zurich, the Basel-Zurich area cannot be considered one functional labour market yet. In addition, the labour markets of major metropolitan areas in Switzerland are often integrated with those in neighbouring regions in other countries than Switzerland. Cross-border labour flows are particularly large in Ticino, Basel-Stadt and Geneva, where cross-border workers represent more than 20% of the local labour force. In Ticino, there were around 44,400 cross border workers in 2009 (27% of labour force), mainly from Italy. In Geneva, the number of cross border labour flows was 53,000 (representing 22% of the labour force), mainly from France; and in Basel-Stadt the number of cross-border workers was 30,600 (20% of labour force), mainly from Germany. Other cantons with a substantial number of cross border workers are Jura (18% of labour force), Basel-Landschaft (15%), Schaffhausen (12%) and Neuchatel (10%)⁹. From an international comparative perspective, these are very high shares of cross border employment: cross border employment rates in Europe tend not to reach 1% in most cases, with Luxembourg being one of the exceptions with a cross border commuting of around 5% of total regional employment (Mathä and Wintr, 2008).

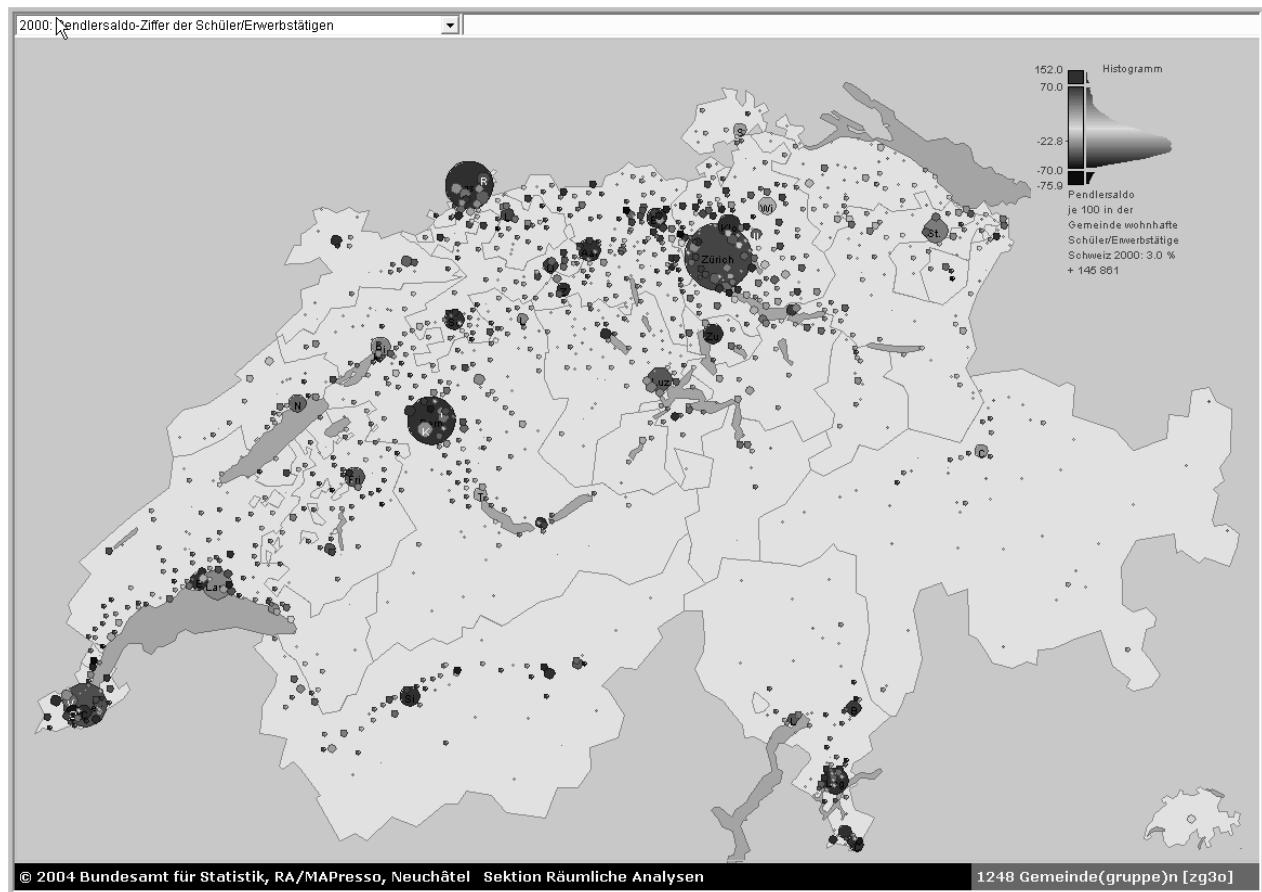
Figure 29. Main commuting flows between cantons (2000)



Source : Own calculations based on data from Statistics Switzerland

25. **Labour markets in the more remote rural and intermediate areas are more fragmented.** In these cantons no substantial commuting flows from or towards other cantons can be identified. More detailed analysis, which is available on a variety of different territorial units in Switzerland (such as 175 districts, 140 spatial planning territorial units, 55 agglomerations etc), reveals a more nuanced picture. Some cantons, such as Graubünden, have sub-cantonal labour market areas, without a clear employment node that attracts commuters from throughout the canton or beyond (Figure 30).

Figure 30. Net commuting flows in municipalities in Switzerland (2000)



Source: Statistics Switzerland.

ii) Continuity in economic specialisations

26. Several cantons in Switzerland have overlapping economic specialisations, which sometimes follows the boundaries of the aggregation level of the *Grandes Régions*. E.g. all cantons in the *Grande Région* of North West Switzerland are specialised in chemicals, pharmaceuticals and plastics, research and development and transport and communications, those in *Région Lémanique* are specialised in health, in *Espace Mittelland* in metallurgy¹⁰ and three out of five cantons in *Espace Mittelland* have very strong specialisations in electronic products and optical instruments. The economic specialisation of cantons in East Switzerland and Central Switzerland is to a great extent similar: all cantons in these two *Grandes Régions* are specialised in agriculture and wood products¹¹. In addition, five out of seven cantons in East Switzerland are specialised in textiles industries and all cantons in Central Switzerland, with the exception of Zug, are specialised in construction.

27. At a more refined level of economic specialisation, several of these *Grandes Régions* in Switzerland also have specialisations in common, most notably Zurich, *Espace Mittelland* and Central Switzerland. Sectors are here defined by their size, specialisation and focus, using methodology and data from the European Cluster Observatory.¹² In Switzerland, economic specialisations in twelve different economic activities have been identified, most convincingly in financial services (Zurich),

biopharmaceuticals (North West Switzerland), transportation and logistics (Espace Mittelland), information technology (Zurich) and metal manufacturing (Espace Mittelland)¹³. The economic specialisations in any Swiss *Grandes Région* overlap with those found in other Swiss *Grandes Régions*. Striking similarities in economic specialisations can be found between Zurich, Espace Mittelland and Central Switzerland; they all have three economic specialisations in common with each other (Finance and Medical devices for all three; Transportation and logistics for Zurich and Espace Mittelland; Production technology for Espace Mittelland and Central Switzerland; and Aerospace for Zurich and Central Switzerland). This could indicate that these economic specialisations spread out over a wider area than defined by the boundaries of the seven *Grandes Régions*. Regions with relatively limited economic specialisations in common with other Swiss regions are Région Lémanique and East Switzerland.

28. **There is also a clear pattern of spatial specialisation in Switzerland when it comes to economic functions.** Firm branches with senior management functions are mostly located in the cores of international cities such as Zurich and Basel. Branches with research and development functions are located in places with high densities of potential partners and competitors, for example the high-technology industry in the Jura region. Branches with distributive functions are located close to customers or in places with low costs and well-developed traffic access, such as many smaller agglomerations in Switzerland's Central Plateau. This functional specialisation pattern can also be observed in one single industry. E.g., the financial services industry concentrates in city centres of larger cities, but in more sub-urban municipalities of metropolitan areas for back office activities. Within the financial services industry there is functional specialisation: Zurich largely dominates commercial and investment banking, whereas Geneva and Lugano focus more on private banking and asset management.

29. **European regions with similar economic profiles as the different Swiss *Grandes Régions* could be considered their “competitors”.** Similarity of economic profile has been identified by listing all the European regions that have similar economic specialisations as Swiss *Grandes Régions*. In order to determine the real competitors, only the first ten European regions with the strongest export position in each economic specialisations have been taken into account. It is assumed that strong competition in export markets also indicates a strong European or international competition on the inputs (people, investments) for the economic activities.

30. **Several *Grandes Régions* in Switzerland, especially Zurich, Espace Mittelland and Central Switzerland, have the same European “competitors”.** These three regions have the same European regions competing for talented people and investments in the same economic sectors: Tübingen, Karlsruhe, Freiburg, all having at least three economic specialisations in common with the three Swiss *Grandes Régions*. The clusters in which they compete are: production technology, medical devices and analytical instruments. East Switzerland is to some extent connected to these three Swiss regions, in that it shares Stuttgart and Dortmund as main competitors with Espace Mittelland and Central Switzerland (Table 4). These European regions are in many cases neighbouring regions of the Swiss regions, which indicate the existence of cross-border functional economic regions.

Table 4. European regions with similar sectoral specialisations as Swiss regions

Zurich	Espace Mittelland	North West Switzerland	Central Switzerland	Ticino	East Switzerland
Tubingen	Tubingen	Lyon	Tubingen	Paris	Stuttgart
Karlsruhe	Karlsruhe	Antwerp	Karlsruhe		Dortmund
Freiburg	Freiburg		Freiburg		
Kiel	Plovdiv		Stuttgart		
	Stuttgart		Wurzburg		
	Dortmund		Kiel		

Note: the listed regions are all regions that have two or more clusters in common with the respective Swiss *Grandes Régions*. In this calculation only the ten regions with the strongest export position in each cluster are taken into account. The Région Lémanique does not have European regions that have two or more clusters in common, so is not indicated in this figure. The names for the regions in question are indicated by their largest city in order to increase the recognisability of the regions. The sectoral specialisations taken into account in these calculations are those that have three or two stars as provided by the European Cluster Observatory; these specialisations include: Finance, Medical devices, Hospitality, Transportation and logistics, Metal manufacturing, Production technology, Analytical instruments, Biopharma, Power generation, Tobacco, Chemical products and IT.

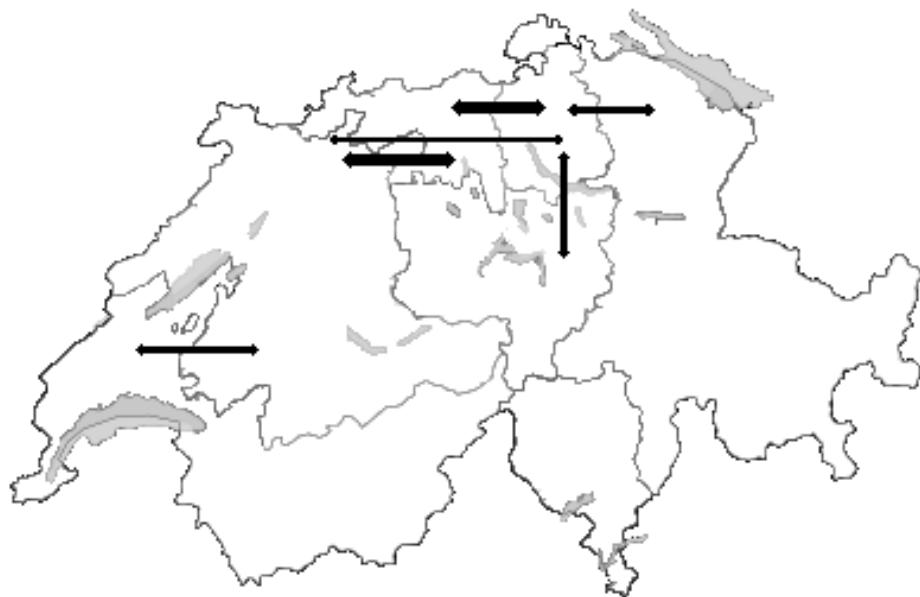
Source: Own calculations based on data from European Cluster Observatory.

iii) Knowledge spillovers

31. **A way to capture inter-regional knowledge spillovers is through co-patent patterns.** Co-patents are patent applications done by several actors, which can be located in the same region, another region in Switzerland, or regions in foreign countries. Co-patents indicate co-operation in the commercialisation of knowledge, and could thus indicate the links that exist between regions with regards to exchange of knowledge and innovations. Regional co-patent data for Switzerland are available at the level of the 7 Grandes Régions in the OECD Patent Database, on which the analysis below is based.

32. **Zurich and North-West Switzerland (in which Basel is located) have high shares (more than half) of co-patents with other regions in Switzerland.** This is much higher than regions such as Ticino and the Région Lémanique (in which Geneva is located). Only 5% of the co-patents in Ticino in 2007 were with other regions in Switzerland; this was 26% in the Région Lémanique. Both of these regions have high rates of co-patents with actors within their region and with foreign regions; most extreme in Ticino (with 89% of co-patents within the region and 95% with foreign regions). In the Region Lémanique there are two times more intra-regional co-patents than inter-regional ones. (Note: As applications for co-patents can be made with more than two actors, it is possible that co-patents are with actors both from the same region, other Swiss regions and foreign regions. For this reason the different shares do not add up to 100%).

33. **Most of the inter-regional links through patents are with neighbouring regions.** In absolute terms, the most important regional linkages through co-patents in 2007 were between North-West Switzerland and Zurich; North-West Switzerland and Espace Mittelland; and Zurich with East Switzerland (Figure 31). This would suggest relatively high functional relationships between the larger metropolitan areas of Zurich and Basel. The links between Région Lémanique with Zurich and North West Switzerland (Basel) are marginal, as are the links of Ticino with all other regions in Switzerland, and the links of East and Central Switzerland with all regions other than Zurich.

Figure 31. Inter-regional co-patent linkages in Switzerland (2007)

Source: Own calculations based on OECD Patent Database.

34. **Some regions in Switzerland (Région Lémanique and North-West Switzerland) have more patent links with foreign regions than with other regions in Switzerland.** Their foreign co-patents represent 59% resp. 51% of co-patents in their region. In absolute terms North West Switzerland has the highest number of co-patents with foreign regions. Relatively lower shares of international co-patents were found in Central Switzerland, Espace Mittelland and East Switzerland.

35. **Foreign co-patent data confirm the existence of a large functional metropolitan area in Northern Switzerland.** The main foreign regions with which actors in three regions in Switzerland (Espace Mittelland, North West Switzerland and Zurich) are linked through co-patents are remarkably similar: Baden-Wuerttemberg, Bayern and Alsace the dominant partner regions for all these three regions, making up between 30% and 60% of their foreign co-patents. They also show many similarities with the regions Central Switzerland and East Switzerland, although these regions also have links with other regions. Swiss regions that show quite distinct co-patent patterns are Région Lémanique and Ticino. The Région Lémanique has more partner regions with French regions, in particular with Rhônes-Alpes, whereas the co-patent links of Ticino are dominated by the region of Bayern, with limited relations with a variety of other regions (Table 5). The similarity of co-patent patterns for many of the northern Swiss regions indicates that their international knowledge networks overlap to a large extent and could thus, also from this perspective be considered, one functional region.

Table 5. Main foreign co-patent regions of Swiss regions; and their share of total foreign co-patents (2007)

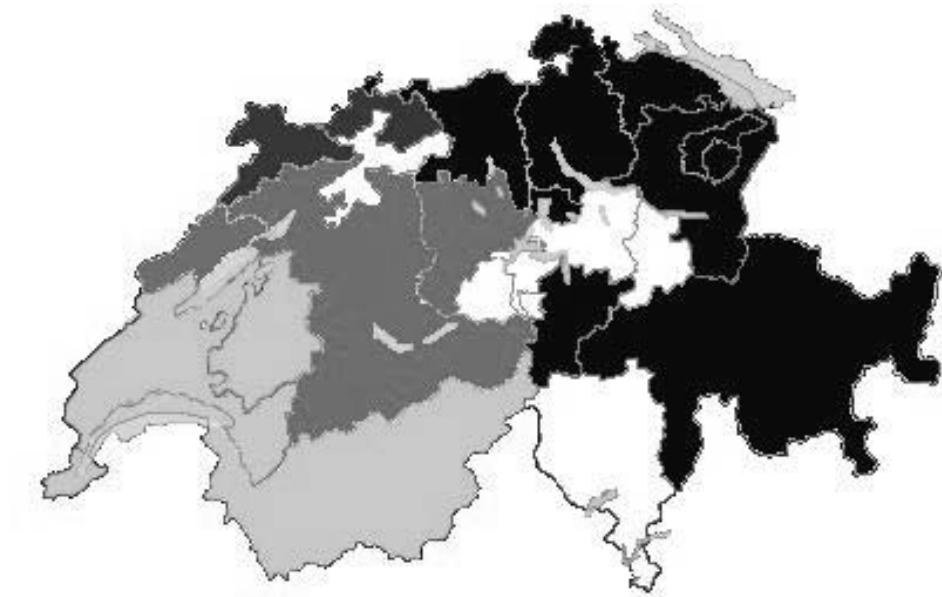
Region Lemanique	Espace Mittelland	North West Switzerland	Zurich	East Switzerland	Central Switzerland	Ticino
Rhone-Alpes (18%)	Baden-Wuerttemberg (23%)	Baden-Wuerttemberg (36%)	Baden-Wuerttemberg (18%)	Baden-Wuerttemberg (22%)	Baden-Wuerttemberg (19%)	Bayern (86%)
Colorado (5%)	Alsace (9%)	Alsace (20%)	Bayern (8%)	Vorarlberg (11%)	Bayern (15%)	Lombardia (2%)
Ille de France (4%)	Bayern (4%)	Bayern (4%)	Alsace (5%)	Liechtenstein (9%)	Rheinland-Pfalz (6%)	Baden-Wuerttemberg (1%)
Vlaams gewest (3%)	Nordrhein-Westfalen (4%)	South East England (4%)	Nordrhein-Westfalen (4%)	Nordrhein-Westfalen (6%)	Washington (5%)	East Midlands (1%)
Franche-Compte (3%)	Mississippi (3%)	North Carolina (3%)	Colorado (4%)	Berlin (4%)	Alsace (4%)	Piemonte (1%)
Baden-Wuerttemberg (2%)	North Carolina (2%)	Mississippi (3%)	Vorarlberg (3%)	Colorado (4%)	Nordrhein-Westfalen (4%)	New Mexico (1%)
Picardie (2%)	Franche-Compte (2%)	Colorado (2%)	Kanto (2%)	Bayern (3%)	Hessen (3%)	Nordrhein-Westfalen (1%)
Bayern (2%)	Rheinland-Pfalz (2%)	Rheinland-Pfalz (1%)	Washington (2%)	Idaho (3%)	South West England (3%)	Jihozapad (1%)
South East England (2%)	Colorado (2%)	Rhone-Alpes (1%)	Hessen (2%)	Provence-Alpes-Cote D'Azur (2%)	Missouri (3%)	Moravskoslezko (1%)
Ohio (2%)	Kentucky (2%)	Nordrhein-Westfalen (1%)	Schleswig-Holstein (2%)	Mississippi (2%)	Colorado (2%)	Israel (1%)

Source: Own calculations based on data from OECD Patent Database.

iv) Business linkages

36. **An analysis of economic interlinkages suggests that there are three to four functional metropolitan areas in Switzerland, plus a limited number of more remote areas.** Economic interlinkages are here expressed by similarities of the regional business cycles. When business cycles have similar directions over a given time period in different regions (they grow or shrink to a more or lesser extent), these region's economies could be considered strongly interlinked: that is, they are at the same point of the business cycle. They could be interlinked because they belong to the same regional markets, because companies in these areas have supply chains that are interlinked, or because they have similar sectoral profiles with similar vulnerability or resilience towards business cycles. Analysis of the business cycles, using data on average yearly cantonal income per capita over 1990-2005, learns that there are broadly four areas in which cantonal business cycles are highly similar: greater Geneva, greater Bern, greater Basel and greater Zurich (Figure 32).¹⁴ Annex 1 provides detailed figures of cantonal business cycles. The functional areas of greater Basel and greater Zurich are to a large extent interrelated, as illustrated for example by the similarities between business cycles of Basel-Stadt and Zurich, St. Gallen and Aargau. Basel-Stadt is however also interrelated with other cantons (Jura and Solothurn) that do not show similarities in business cycles with the cantons in greater Zurich. There are seven remaining cantons in which business cycles are relatively unrelated to each other.

Figure 32. Functional areas in Switzerland based on economic interlinkages (1990-2005)



Source: Own calculations based on data from Statistics Switzerland.

1.5 Conclusion and implications for policies

37. **The policy challenges with respect to regions in Switzerland are moderate in comparison with those in many OECD countries.** The dichotomy between urban and rural areas in Switzerland is relatively limited: most people live in intermediate regions, cities are relatively small and rural areas are not as remote as in many other OECD countries. Although mountains impose certain geographical barriers, areas in Switzerland are not far removed from cities and towns. Inequality between regions is relatively limited and every area can be considered to have access to at least a fair amount of public and private services. Although the GDP per capita in urban regions is higher than in rural areas, its level in all Swiss regions remains very high in comparison with many OECD regions. There is no de-population going on from rural areas (nor from other areas in Switzerland for that matter) and the challenges of ageing are there but less acute than in several other OECD regions. All these elements suggest that various policy challenges that OECD countries face with respect to regional development, are absent in Switzerland.

38. **A clear challenge for successful regional economic performance in Switzerland is labour productivity growth.** Regions in Switzerland show considerable variation in this respect. Although some regions, notably Basel-Stadt, are very labour productive and continue to show labour productivity growth, several regions in Switzerland show productivity growth rates lagging behind those of many OECD regions. Improving the labour productivity growth of these regions forms the key for the sluggish labour productivity development of Switzerland as a whole. It will also help to overcome some of the regional economic divergence tendencies that have been taking place in the last decade, with some of the highest-income cantons showing the highest economic growth rates. Chapter 2 and 3 will focus on policies that would help to increase productivity growth rates.

39. Policies to improve regional labour productivity growth will have to take economic differences into account between urban, intermediate and rural areas. These areas have different economic specialisations, which are connected to their characteristics: like elsewhere in the OECD, urban regions tend to be specialised more in labour-intensive, space-extensive services, rural areas in resource intensive goods, agriculture and tourism; and intermediate regions in more traditional manufacturing sectors, such as textiles, food and machinery. These sectoral specialisations have an impact on regional productivity: urban regions tend to be specialised in sectors that are generally more labour productive. In addition to that, there is a clear correlation between high tech employment, generally concentrated in urban areas, and high productivity growth. Policies that attempt to increase productivity should take these regional differences into account; regions would need an adapted diversification, in which comparative advantages are strengthened and in which stimulating new sectors would only make sense as long as it corresponds to existing economic assets and characteristics.

40. Functional economic relations have developed at a scale that goes beyond most current cantonal boundaries. Commuting, economic activities and knowledge spillovers all take place in an area that is in many instances larger than the canton. These are functional spaces based on economic inter-relations: for example, for many firms, Basel and Zurich are not separate economic areas but one resource pool of potential knowledge, partners and customers. This means that the different sub-national actors (municipalities, sub-cantonal regional areas and cantons) and their policies become increasingly inter-related. This has implications for inter-cantonal and other inter-governmental cooperation mechanisms that are needed, as well as the aggregation level of territorial units for regional policy intervention in Switzerland. These functional regions consist of several centres: they are poly-centric. One of the challenges of regional policies in Switzerland could be to exploit complementarities that are inherent features of this poly-centrality. In the case of Zurich and Basel, this could be the complementary gateway function: Basel for international rail connections, Zurich in the field of air travel. In this context, an essential prerequisite is the efficient transport infrastructure linking the various centres to one another, and linking smaller sub-centres to the international gateways of Zurich and Basel. Smaller agglomerations have to be viewed as complementary centres taking over functions that cannot be provided by cities such as Zurich or Basel. Regional policy in Switzerland could play a role in “managing” these complementarities in order to raise productivity growth in Switzerland as a whole. Chapter 2 will illustrate how regional policies could achieve this.

NOTES

1. Region Lémanique consists of the cantons of Vaud, Valais and Geneva; Espace Mittelland consists of the cantons of Berne, Freiburg, Solothurn, Neuchâtel and Jura; North West Switzerland consists of Basel-Stadt, Basel-Landschaft and Aargau; East Switzerland consists of Glaris, Schaffhausen, Appenzell Ausserrhoden, Appenzell Innerrhoden, St. Gallen, Graubünden and Thurgau; Central Switzerland consists of Luzern, Uri, Schwyz, Obwalden, Nidwalden and Zug. Both Zurich and Ticino consists of the canton of the same name.
2. Predominantly urban regions are regions in which less than 15% of the population lives in municipalities with a population density of less than 150 inhabitants per square kilometre. Intermediate regions are regions in which 15% to 50% of the population lives in municipalities with a population density of less than 150 inhabitants per square kilometre. Predominantly rural regions are regions in which more than 50% of the population lives in municipalities with a population density of less than 150 inhabitants per square kilometre.
3. Predominantly urban regions are Genève, Solothurn, Basel-Stadt, Basel-Landschaft, Aargau, Zurich and Zug. Intermediate regions are Vaud, Bern, Fribourg, Neuchâtel, Schaffhausen, Appenzell Ausserrhoden, St. Gallen, Thurgau, Luzern, Schwyz, Nidwalden and Ticino. Predominantly rural regions are Valais, Jura, Glarus, Appenzell Innerrhoden, Graubünden, Uri and Obwalden.
4. Région Lémanique consists of the cantons of Vaud, Valais and Geneva, which are intermediate, predominantly rural and predominantly urban cantons respectively.
5. With the exception of the urban canton of Aargau that has a specialisation co-efficient of 1.04 in wood products and is thus slightly more specialised in this sector than the national average in Switzerland.
6. This applies to 10 respectively 11 of 12 intermediate cantons.
7. Over 1999-2006 the canton in Switzerland with the lowest productivity growth was Luzern (-0.2%) and the canton with the highest productivity growth was Basel-Stadt (5.5%).
8. Note: the case of St. Gallen is a bit peculiar in this respect: although it has substantial out-going commuting flows to Zurich, it has incoming commuting flows from other cantons that are similar in size, resulting in net commuting flows that are below 10%. Considering the extent of the commuting flows, the labour markets of St. Gallen and Zurich could however be considered to be interlinked.
9. The share of cross border workers in the other cantons is limited, also in the cantons such as Zurich and Berne (0.8% and 0.3% of labour force respectively) (Data from Statistics Switzerland).
10. With the exception of Fribourg whose employment share in the sector is slightly below the national average
11. With the exception of Zug which is not specialised in agriculture, nor wood products.
12. The European Cluster Observatory shows the extent to which clusters have achieved specialised critical mass by employing measures of these three factors, and assigning each cluster 0, 1, 2 or 3 'stars' depending on how many of the below criteria are met. The 'size' measure uses the share of total European employment as an indicator and shows whether a cluster is in the top 10% of all clusters in Europe within the same

cluster category in terms of the number of employees. Those in the top 10% will receive one star. The 'specialisation' measure compares the proportion of employment in a cluster category in a region over the total employment in the same region, to the proportion of total European employment in that cluster category over total European employment. If a cluster category in a region has a specialisation quotient of 2 or more it receives a star. The 'focus' measure shows the extent to which the regional economy is focused upon the industries comprising the cluster category. This measure relates employment in the cluster to total employment in the region. The top 10% of clusters which account for the largest proportion of their region's total employment receive a star.

13. The clusters mentioned here are all three star clusters as defined by the European Cluster Observatory.
14. Greater Geneva consists here of Geneva, Vaud, Fribourg and Valais; greater Bern of Bern, Neuchatel and Luzern; greater Basel of Basel-Stadt, Basel-Landschaft and Jura; greater Zurich of Zurich, Argau, Zug, Schaffhausen, Thurgau, St.Gallen, Appenzell Ausserrhoden, Appenzell Innerrhoden, Graubünden and Uri.

CHAPTER 2: NEW REGIONAL POLICY IN SWITZERLAND

Key messages Chapter 2:

While the New Regional Policy (NRP) reflects a clear shift of focus from infrastructure and financial assistance towards economic support for value added creation, further action can help to maximise its impact in practice:

- Extending the NRP's **territorial coverage** can reduce economic fragmentation and support polycentric development. The current focus on rural, mountains and border areas could be broadened to the whole Swiss territory, in order to better take into account existing or potential linkages across regions, especially in terms of urban-rural linkages.
- More effective incentives for **intercantonal co-operation** will facilitate policy synergies within functional economic areas. Accompanying financial incentives with technical assistance and initiatives to disseminate knowledge on successful cases of intercantonal development projects could encourage further collaborative behavior.
- Enhancing **co-ordination with sectoral policies** will increase the leveraging effect of the NRP. Formal co-ordination (or a possible merger) between the NRP and agglomeration policy could be considered, and closer collaboration could be between the NRP and agricultural policy (with the goal of positioning the latter in a broader context of rural policy).
- Building **strategic management and evaluation capacity** both at federal and cantonal levels can bridge the federal government's commitment to providing good framework conditions and the cantons' operational responsibility, while abiding by the Swiss principle of subsidiarity.

Introduction

41. **The regional focus emerged on the Swiss policy agenda in the 1970s** when spatial planning and regional policy were separately introduced through constitutional amendments (OECD, 2002). While the Spatial Planning Law (1979) and the subsequent Spatial Planning Guidelines (1996) prioritised an efficient use of land and harmonised development across the country along the lines of "decentralised concentration", old regional policy used infrastructure investment and loans to attract firms in mountainous and rural regions (Table 6 and Box 1). Spatial planning initially aimed to organise urban areas and to protect rural areas from urban sprawl, whereas regional policy targeted infrastructure support for remote mountain regions. With time, the objectives of spatial planning were geared towards territorial co-ordination of infrastructure development while regional policy was extended towards economically disfavoured regions in general.

Table 6. Spatial planning and regional policy in Switzerland before the NRP

	Spatial planning	Regional policy
Legal basis	Spatial Planning Law (1979) Spatial Planning Guidelines (1996)	Law on Investment Assistance in Mountain Regions (LIM, 1974)
Objective	Efficient use of limited land and reduction of external cost Harmonised spatial development across the country (“decentralised concentration”)	Assistance for mountainous and rural regions with emphasis on infrastructure to attract firms
Instruments	Federal framework law Cantonal plans Municipal plans (only land use plans for zoning)	Loans for infrastructure in mountain regions Loan guarantees and interest subsidies for SMEs
Main actor	Cantons and municipalities	Cantons and groups of municipalities

Box 1. Instruments of “old” regional policy in Switzerland

Historically, multiple policies ranging from fiscal equalisation and agricultural policy to public investment in cantonal infrastructure contributed to interregional equity and targeted support to specific regions. The grants, loans, and tax exemptions currently available under New Regional Policy (NRP) replace or incorporate the following instruments used under “old” regional policy:

- *Law on investment assistance for mountainous regions (LIM, introduced in 1974 and updated in 1997)*: provided low/no-interest loans for up to 50% of investment costs in basic and development infrastructure in 54 mountain regions. A financial match of at least 25% was required from cantons.
- *Assistance for businesses in mountain areas*: provided loan guarantees and interest subsidies for SMEs, hotels and health resort facilities.
- *Support of regions in economic transition*: provided guarantees, interest subsidies and tax concessions for private sector projects that created or maintained jobs in economically weak regions.
- *RegioPlus*: supported structural change in rural areas by co-financing approximately 150 local or regional projects that united public and private actors across sectors. Tourism and regional competence centers for SMEs were the top funded themes. On average, the Confederation provided 34% of project funding, with 12% coming from cantons and the remainder from private sources, including personal contributions. RegioPlus has been integrated into NRP.
- *InnoTour*: offered financial assistance to SMEs in order to promote innovation in tourism throughout Switzerland. Projects must involve multiple partners, which must also finance at least 50% of the project. InnoTour, which also finances education and training, still exists today and is funded with CHF 21 million for the period 2008-2011.
- *INTERREG, URBACT and ESPON* are European Union programmes that support cross-border, interregional, and transnational cooperation among regions in Europe. While not an EU country, Switzerland has actively participated in those programmes. Switzerland engaged in approximately 500 projects through INTERREG between 2000 and 2006.

Sources: OECD (2002), “Territorial Review of Switzerland”, pp. 97-102; Gerster, R. and Haag, A. (2003), “Diminishing the Digital Divide in Switzerland ICT-Policies, Practices and Lessons Learnt”, Swiss Agency for Development and Cooperation, Nov 2003; European Commission (2008), “Focus- Final Evaluation of the Swiss Regio Plus programme”, FlashNews: Leader+ Observatory, Issue 74 of 15 Feb 2008, newsletter of EC Directorate-General for Agriculture and Rural Development; Scheidegger, E. (2004), “Can The State Promote Innovation in Tourism? Should It? The Example Of Switzerland”, Presentation to the OECD Conference on Innovation and Growth in Tourism, 18-19 Sep 2003, Lugano, Switzerland; SECO (2009), « Etude de monitorage OCDE 2010, Nouvelle politique régionale : Rapport général », Mai 2009; “Danuta Hübner encourages Switzerland to step up cooperation with EU”, Europa Press Release, 10 November 2008,

42. Throughout the mid-1990s, the scope of Swiss regional policy shifted away from redistribution towards a new focus on efficiency, competitiveness and the creation of value added in rural areas. This shift was formalised with the introduction of the New Regional Policy (NRP) which encourages an endogenous “growth-oriented” approach emphasising open markets, export capacity and competitiveness. Based on legislation passed in 2006 and launched in 2008, NRP is an illustration of a reform process currently underway in many OECD countries (Table 7). In most cases, the shift from top-down sectoral subsidies towards bottom-up integrated cross-sectoral investment represents a complex agenda that can take various forms (Box 2). This chapter aims at examining the new approach adopted by the NRP, as well as its challenges and opportunities.

Table 7. Old and new approaches to regional policy in OECD countries and in Switzerland

	OECD		Switzerland	
	Old approach	New approach	Old regional policy	NRP
Objective	To redistribute from richest to poorest regions	To help all regions maximize their competitive advantages	To assist rural and mountainous regions with infrastructure to attract firms	To enhance the regions’ competitiveness, export capacity and value-added creation
Geographic coverage	Lagging regions	All regions	Rural and mountainous regions	Rural and mountainous areas (excluding largest urban regions, eligible for separate agglomeration policy) and border regions
Targeted unit for policy intervention	Administrative areas	Functional economic areas	Sub-cantonal level (LIM regions)	Cantons and regions
Instruments	Subsidies and direct aid to individual firms	Mix of investment in hard and soft capital	Loans for infrastructure in mountainous regions, loan guarantees and interest subsidies for SMEs, project subsidies	3 pillars: 1) Support regional economic strengths 2) Co-ordination of sectoral policies 3) Capacity building
Governance approach	Centralised, top-down	Bottom-up, collaborative	Regional plans	Cantonal programmes, based on contracts between Confederation and cantons

Box 2. Regional policy reforms in OECD countries

Several countries are directly or indirectly influenced by the evolution of EU policy towards more selective public investment targeting regional competitive advantages. Although all countries are in principle concerned with promoting national growth while keeping regional disparities at a politically and socially tolerable level, regional policy reforms have manifested themselves under different forms across OECD countries:

- *More effective integration of sectoral policies by the central government.* Efforts to bring a more coherent mix of sectoral policies to the regions were sometimes translated into spatial planning approaches at national and regional levels (e.g., Comprehensive National Development Plans in Japan, National Spatial Policy Programme and Regional Spatial Plans in Portugal) or various forms of interministerial co-ordination of sectoral policies (at the national level through the preparation of the National Strategic Reference Framework in EU countries; and at the regional level through co-ordination among the deconcentrated bodies of different ministries).
- *Customisation of sectoral policies to specific regional needs.* Measures were taken to better reflect regional needs during the elaboration of national sectoral policies. In particular, “rural proofing” initiatives aimed at determining whether a policy was likely to have a positive/negative impact on rural regions and addressed appropriately rural development issues (e.g., Canada’s “rural lens”, Finland’s Rural Policy Committee, rural development strategy currently under preparation in Sweden).
- *Development of regional tools to achieve national policy goals.* In addition to tourism or environment policies that governments tend to connect more directly with regional geographic characteristics, other policies have started to recognise regional dynamics as an essential component of the policy setting. One of the most striking examples is science and technology policy and industrial policy, which have recently gained a more sophisticated awareness of the importance of proximity and are increasingly turning towards region-based innovation policy instruments (e.g., Centres of Expertise in Finland, VINNVAÄT in Sweden, BioRegio in Germany, METI Industrial Clusters in Japan).

2.1. The approach of the NRP: clarified objectives and renewed instruments

2.1.1. Policy focus

43. The New Regional Policy (NRP) represents a substantial shift from redistribution of resources from stronger to weaker areas, to promotion of endogenous growth opportunities in the latter areas. The objective of the NRP is to assist rural, mountainous, and border areas to increase their competitiveness and to generate value added. Reduction in disparities is assumed to be an indirect result of increased regional competitiveness. Swiss rural regions tend to have a substantial share of economic activities (e.g. agriculture, natural resources, wood products, energy and construction) associated with relatively lower productivity and lower exporting rates (see Chapter 1, section 1.3). The NRP assumes, however, that prosperity and development potential are driven by those economic activities that focus on exportable goods and services (i.e. outside of a canton, outside of the country).

44. The reform of the fiscal equalisation system (RPT) which was enforced in 2007 has been considered as a way to clarify policy objectives across different federal departments (Box 3). In particular, it has allowed for a clear division of policy objectives between the new fiscal equalisation system (in charge of ensuring equity across cantons) and the NRP (in charge of promoting the competitiveness of regions). The reform of the fiscal equalisation system aimed to provide the framework conditions for the NRP to focus on promoting the regions’ competitiveness and value-added creation. It also strengthened incentives for cantons to bolster their tax bases by attracting new firms for example (Kirchgassner, 2007).

Box 3. Reform of fiscal equalisation (RPT)

Switzerland's fiscal federalism reforms, which back to the late 1980s, were passed in three successive popular votes in 2003, 2006 and 2007. The 2003 vote concerned the constitutional amendments necessary to implement the reform, the 2006 vote concerned legal amendments to intergovernmental cooperation in various policy areas, and the third vote concerned the size of and rules applied to the equalisation funds introduced back in 2003. The government presented the reform package to voters in the form of four "pillars":

- First, **responsibility for a number of policy areas** such as education, social security, transport infrastructure and others – previously funded and regulated jointly by the federation and the cantons – were allocated either entirely to the federal or the cantonal level. As the federal level was funding its part of joint tasks through a set of intergovernmental grants, disentangling competences led to a decrease of grants by approximately 40 percent from their pre-reform level.
- Second, **a new fiscal equalisation system** was introduced, consisting of two elements: a) a horizontal equalisation fund financed by cantons with above-average tax raising capacity and granting payments to cantons with below-average tax raising capacity, and b) a vertical equalisation fund financed by the federation for cantons with very low tax raising capacity or with above-average infrastructure or socio-demographic cost (education, social welfare etc.). To compensate for the financial cost linked to the vertical equalisation fund, the federal government reduced the share of the cantons in the federal income tax from 30 to 17 percent.
- Third, the federal level obtained the **right to coerce cantons into horizontal collaboration** and joint funding in selected policy areas such as higher education and health care, in order to reduce externalities and free-riding of cantons and to improve collaboration on service provision across cantons.
- Fourth, a number of **public finance and new public management techniques** were introduced into the remaining joint policy areas where federal-cantonal collaboration was still required, such as standard and norm cost accounting or performance contracting. In the latter case, policy objectives – e.g. on environmental protection – were established jointly between the federation and the cantons while implementation was left to the cantons.

In addition, the creation of a "hardship fund" aimed at compensating cantons that were net losers of the reform, for a period of up to 28 years. A new budget rule also stipulated that the size of the vertical equalisation fund should have around two thirds of the size of horizontal equalisation. After several changes to the substance as well as the title of the reform, the official name became "New Organisation of Fiscal Equalisation and of Task Allocation". Every four years, the Parliament will have to decide on the total size of equalisation. While the reform covered the spending side of the federal budget – and grant revenues for the cantons – the federal tax system, tax assignment across government levels and cantonal taxing power remained untouched, except for the lower cantonal share in the federal income tax.

The "New Fiscal Equalisation" was one of the farthest-reaching institutional and fiscal reforms since the creation of the federation. It took more than 15 years from a small beginning in federal and cantonal administrations to the amendment of one eighth of the entire Swiss constitution. The lengthy reform process allowed integrating all relevant stakeholders and was flexible enough to respond to new policy challenges, like the spending crisis in the large cities. The reform did not create a camp of united enmity but on the contrary offered several win-win situations and weakened or split remaining veto powers by limiting the number of well-identified losers. The support from a few political leaders, both at the federal and the cantonal level, and the conceptual leadership of the finance ministry and a few associated economists helped keep the reform process on track. Sequencing made the various reform steps easier to digest for voters, although the reform course was basically set at the first vote on the constitutional amendments. After adoption, the various reform steps are currently being implemented without much resistance, except for coerced cantonal collaboration, which is again on the political agenda, and for technical problems related with the definition of "tax raising capacity". Finally, the reform spurred several cantons to reform their own cantonal-municipal fiscal relations and to increase efficiency of local public finance. All in all, the scope of the reform was unusual, and it is difficult to establish how much of its successful adoption is due to the particular Swiss context or due to favourable circumstances.

Source: adapted from "Reforming Fiscal Relations in Switzerland: the "New Fiscal Equalisation" (draft note)", COM/CTPA/ECO/GOV(2009)14

2.1.2. *Geographic target*

The NRP targets three categories of areas:¹

- The first target is *rural and mountainous areas*, which incorporate the vast majority of Swiss territory but excludes the large agglomerations of Zurich, Basle, Bern, Lausanne and Geneva and the urban cantons of the Aargau, Basel-Landschaft, Basel-Stadt, Geneva, Solothurn, Zug and Zurich. Exceptionally, cantons may request that NRP funds be used for excluded areas. The seven urban cantons may also apply for NRP funds if they can demonstrate that the areas to be supported present the same structural challenges as the traditional target areas of NRP. In addition, parts of Aargau and Zurich have been deemed eligible for NRP funds for the 2008-2011 period, and the cantons of Basel-Stadt and Basel-Landschaft receive NRP funds to promote cross-border and interregional cooperation. The NRP catchment area includes middle and small agglomerations, which are important drivers of their region's economic development and therefore eligible for NRP support. Ultimately, it is up to cantons to define which of their regions will be eligible for NRP support.
- The second geographic target is *border regions*. Within the framework of INTERREG IV, all cantons can cooperate with European partners. Border cantons can do it via transborder (INTERREG IV A) programmes, all cantons via transnational (INTERREG IV B) and interregional (INTERREG IV C) programmes. At present, four INTERREG IV A programme regions cover the entire Swiss border area: France-Switzerland, Italy-Switzerland, Upper Rhine, Rhenish Alps–Lake Constance–Upper Rhine. Switzerland also participates in 2 INTERREG IV B programmes (Alpine Space and North-West Europe) and in INTERACT, ESPON and URBACT, which are European Union initiatives for the European Territorial Co-operation objective.
- Finally, the Confederation may offer tax reductions to *30 areas with specific structural problems*, such as low income and/or high unemployment rates. The eligible areas were collaboratively defined by the Confederation and cantons. Approximately 10% of the Swiss population lives in these 30 areas, which are located in 11 cantons (the entire canton of Jura and certain regions in Bern, Lucerne, Uri, Glarus, Solothurn, St. Gallen, Graubünden, Ticino, Valais and Neuchâtel). During a transition period which ends in 2010, partial concessions are available to areas that will be ultimately excluded (e.g. Schaffhausen, Thurgau, St. Gallen areas close to Zurich Airport) (Regiosuisse, n.d., Landolf et al., n.d.).

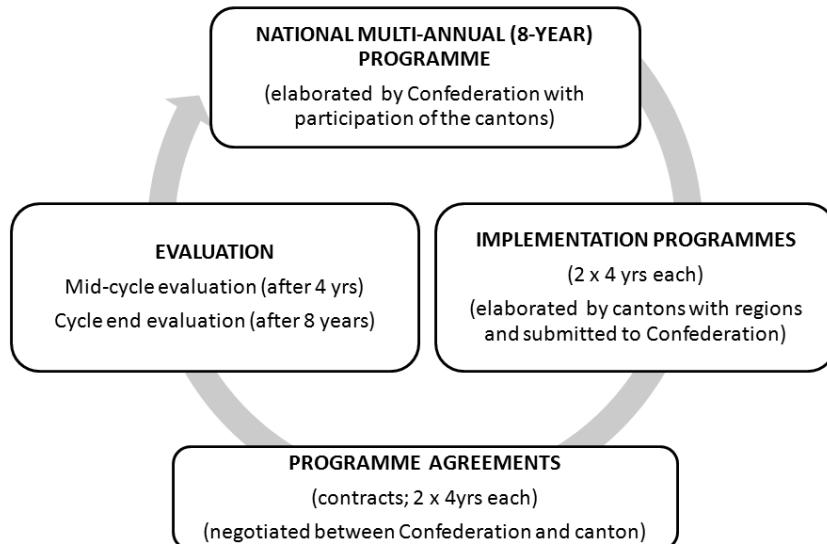
45. **A clear political intention of the NRP has been to act at a supra-cantonal level in order to enhance geographic coherence and economic functionality.** This suggests cantons must not limit their activities to administrative boundaries, but instead seek and intervene in functional economic areas. Cantons are encouraged to include initiatives in their programmes, which are jointly developed or implemented by several cantons. Within cantons, NRP programmes apply primarily to "regions" although their definition varies across cantons. According to the Law on Regional Policy, "regions" are defined as "groups of cantons" (and municipalities). Most "regions" are intermunicipal associations or corporations that finance a joint regional management (financed by cantonal money and money from each municipality). Most of the cantons have established service agreements with their regions, although some smaller cantons implement the NRP without defining regions.

2.1.3. *Actors and instruments*

46. **The NRP is guided by a principle of subsidiarity.** As regional policy is a shared task, the federal government is responsible for providing the *overall policy orientation*, setting strategic objectives, and (co)financing programmes and projects while cantons are in charge of *policy implementation* (although

as noted below, cantons provided input into the multi-year national NRP programme, seemingly giving cantons a role in policy design) (Figure 33). The same applies to the EU Cohesion Policy for example, with a dialogue on the formulation of regional policy programmes taking place between the EU, the Member States and the regions while their implementation is left to the discretion of the Member States and regions.

Figure 33. Elaboration of the NRP programmes between the Confederation, cantons and regions



Source: Based on "Collaboration Confédération/cantons en matière de conception, de mise en oeuvre et d'invitation » made available by Regiosuisse at: www.regiosuisse.ch/politique-regionale-ch/processus-d2019application-processus-de-mise-en.

47. The NRP is organised around three pillars of activity:

1. *Pillar 1 focuses on increasing the economic strength of regions and receives about 85% of total grant funding.* This pillar provides direct support for projects and programmes, including infrastructure. One-third of financing is dedicated to intercantonal projects. Pillar 1 activity targets the pre-competitive, framework conditions of the regional economy.
2. *Pillar 2 emphasizes horizontal coordination across sectors and receives approximately 5-10% of NRP funding.* The NRP aims to strengthen coordination by implementing mechanisms such as cooperation agreements or cross-sectoral commissions with six sectors: 1) agriculture, 2) tourism, 3) environment, 4) innovation, 5) economic promotion, and 6) spatial planning.
3. *Pillar 3 supports the implementation of Pillars 1 and 2 by enhancing knowledge of regional policy among cantons and regional agencies (~5-10% of funding).* Using a contracted private sector company (Regiosuisse), the federal government supports networking and capacity building among regional policy actors.

48. **Pillar 1 of the NRP is based on contractual arrangements between the Confederation and cantons (with regions).** The NRP is implemented via *a multi-annual (8-year) programme* developed by the State Secretariat for the Economy (SECO), with the input of cantons². The programme has six thematic priorities with different geographic targets (Table 8), among which knowledge transfer and structural change in tourism are currently considered the most important. The federal government invites all cantons to submit an *implementation programme* to the federal government in order to apply for funding. These must align to the multi-year programme and meet a variety of criteria, including evidence of efforts toward sustainable development. In 2007, all but three cantons participated³. Proposed programmes were not fully funded since cantons requested a total of CHF 293 million in loans (147% of available funds) and CHF 148 million in grants (201% of available funds). Based on the implementation programme, a *programme agreement* (“convention-programme”) is signed between the Confederation and the canton. This negotiated four-year contractual arrangement lays out the objectives, key milestones, management processes, the timetable, and the financing.

Table 8. Six thematic priorities of the New Regional Policy

Thematic priority	Geographic target
Knowledge transfers in export-oriented value creation systems	Rural areas, including border regions
Structural change in tourism	Mountainous and lake regions
Market-oriented education and health systems	Rural areas
Energy sector	Alps and selected other regions
Natural resources	Sparsely populated midland areas, Jura region, and the Alps
Increased value added in agriculture in open markets	Agricultural rural areas

Source: Schiess, R. (2009), “Swiss Regional Policy”, presentation to OECD mission, November 2009.

49. **Grants, loans, and tax reductions constitute the three main financial instruments to implement the NRP.** Within a multi-annual budget of CHF 405.5 million for 2008-2011, the NRP allocates CHF 90 million per year: CHF 40 million is allocated to the activities of Pillars 1, 2, and 3, while the remaining CHF 50 million is available as loans with preferential interest rates for infrastructure development (Table 9). Grants and loans must be matched by an equal contribution from the cantons and cannot finance projects otherwise supported by the federal government (Loi fédérale, 2006). Due to the lack of a uniform definition of regional policy in OECD countries, and data limitations linked with potential components of regional policy, it is difficult to draw a coherent comparison between the Swiss budget for regional policy and those of other OECD countries. In addition to the grants and loans in Switzerland, there are reductions of direct federal tax which may be provided to private companies in specific geographic areas (see above) to reinforce the economy and create jobs. Tax reductions are limited to 10 years and provided only if the canton provides a financial contribution equal to that of the Confederation (Regiosuisse, n.d.). Eligible firms are industrial enterprises and service companies close to production that have importance for the regional economy and that create jobs. Cantons determine the tax relief to be awarded, and if accepted by the company, forward the request to SECO. In 2008, 297 enterprises from 16 cantons benefited from these concessions. Business plans indicate a total of CHF 7.76 billion in planned investments and 17 600 additional jobs. It remains unclear to what extent the current use of NRP funding has leveraged private investment. Although the inclusion of the private sector is encouraged, companies rarely seem to play an active role in projects other than providing loans and grants (responses to OECD questionnaire, 2009).

Table 9. NRP budget (CHF million)

	Total for 2008-2011	Per year
TOTAL	405.5	90.0
Loans	262.6	50.0
Grants	142.9	40.0
Pillar 1	119.7	28 – 32⁽¹⁾
Cantonal programmes	69.6	
Intercantonal collaboration	27.3	
INTERREG IV A+C	22.9	
Pillar 2	12.2	5 -8⁽¹⁾
INTERREG IV B, ESPON, URBACT	4.0	
National coordination measures between federal agencies	8.2	
Pillar 3	11.0	3-4⁽¹⁾
Regiosuisse	9.6	
Studies/research on regional development policy	1.5	

Note: (1) Approximate range

Source: SECO.

2.2. Challenges and opportunities for the NRP

50. Further enforcement of the NRP's objectives could be sought along four lines of action, which will be considered in turn below:

- i) Extending coverage to all regions
- ii) Increasing inter-cantonal policies
- iii) Better co-ordination of the NRP with sectoral policies; and
- iv) Build strategic management and evaluation capacity.

2.2.1. Extending coverage to all regions

51. **In contrast to some OECD countries that target the growth potential of all regions, the NRP continues to apply specifically to rural, mountainous and border areas** under the explanation that urban areas are eligible for federal support through a separate agglomeration policy since 2001. This is the result of a compromise after urban areas initially argued for the elimination of regional policy, while mountainous cantons aimed to increase assistance for structurally weak regions. In practice, the coverage area of old regional policy, the NRP, and agglomeration policy display several geographic overlaps (Figures 34, 35 and 36). All cantons are involved in the implementation of NRP, including predominantly urban cantons, but their policy interventions are limited to the “rural”, mountainous or border areas that can be found in these urban cantons.

52. **This limited coverage of the NRP is at odds with increasing interlinkages between different regions (urban, intermediate and rural).** As illustrated in Chapter 1, many cantons are linked to each other through inter-cantonal commuting flows, continuity in economic specialisations, patent links and economic activities that cross cantonal boundaries. These interlinkages indicate that the current target areas of the NRP cannot be seen in isolation; their economic performance depends on the relation they have with other areas in Switzerland. In many OECD countries, regional development in lagging regions is seen in

relation to well-performing regions: supporting the latter to do better can also be considered a viable policy to support lagging regions, under the objective of facilitating economic spillovers between well-performing regions and lagging regions, and more particularly urban-rural linkages (Box 4). The limited territorial coverage of the NRP constrains such possibilities.

Box 4. Economic spillovers among regions and urban-rural linkages

A number of inter-connected mechanisms can help to generate economic spillovers among regions. Such mechanisms include:

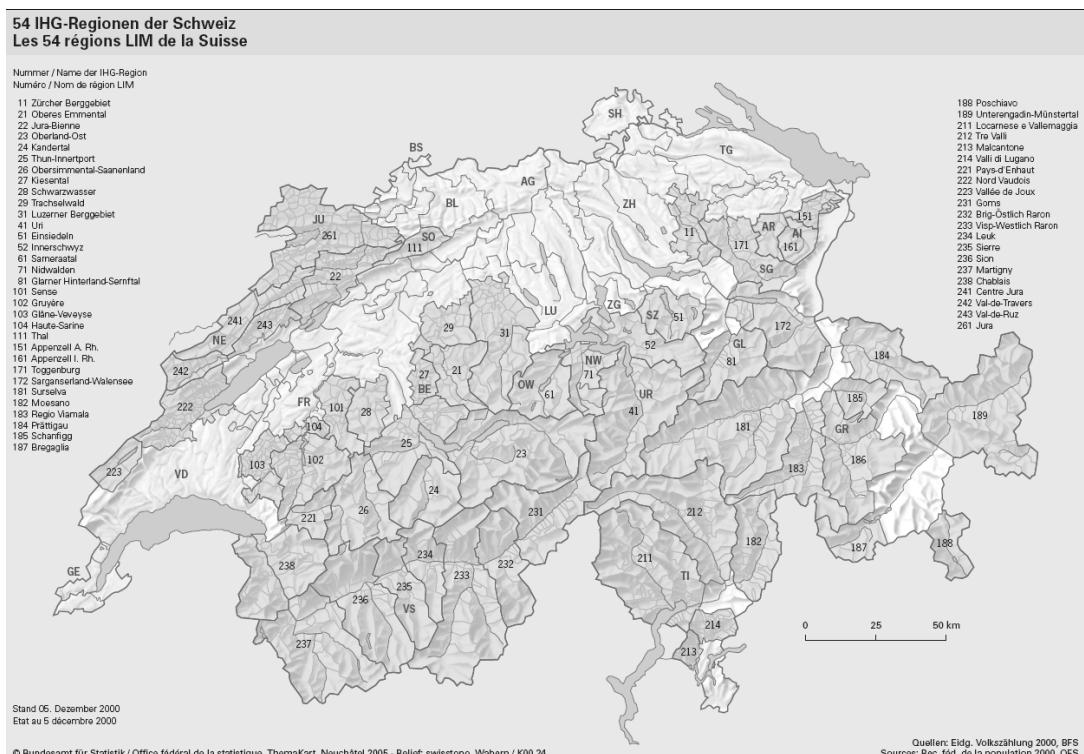
- Sharing of indivisible facilities such as local public goods or facilities, particular to a place, that serve several individuals or firms. Some examples are laboratories, universities and other large facilities that cannot belong to one particular agent but where some exclusion is implicit in their provision.
- Gains from the wider variety of input suppliers that can be sustained by a larger final-goods industry, that is, the presence of spillovers along with forward and backward linkages allows firms to purchase intermediate inputs at lower cost.
- Gains from the narrower specialisation that can be sustained with higher production levels. Several firms specialise in producing complementary products, reducing overall production costs.
- Risk reduction: if there are market shocks, firms can adjust to changes in demand as they have access to a deep and broad labour market that allows them to expand or contract their demand for labour.
- Matching mechanisms by which agglomeration improves the expected quality of matches between firms and workers, so both are better able to find a better match for their needs. Similarly, an increase in the number of agents in the labour market improves the probability of matching.
- Learning mechanisms based on the generation, diffusion, and accumulation of knowledge; these refer not only to learning about technologies, but also how to acquire the skills.

In many cases, the issue of rural-urban linkages is complicated by the issue of how to guide development in such a way that the environmental and social benefits of rural regions are not destroyed by efforts to generate economic opportunities. Often, the characteristics of rural assets as pure public goods mean that there are few direct incentives for private actors, or even public ones, to provide, maintain or invest in the supply of amenities because it is difficult to convert this investment into revenue for the investors. Nonetheless, these are clearly important assets for a region and can represent an important, and sometimes even the only, source of competitive advantage in some rural regions. Moreover, the valorisation of amenities is often the best incentive for their conservation. The central question is: how can policy makers “internalise” the externality benefits inherent in rural amenities so that providers have financial incentives to maintain and/or provide access to these amenities at a reasonable cost to the various users (both individual visitors and, in many cases, society as a whole). Instruments to ensure optimal provision of amenities can take several different forms, including the following: creating direct amenity markets (paying for access, user fees); creating amenity-related commodity markets (“green” markets); the buying of resources by interest groups; incentives, taxes and subsidies to providers etc. Market-oriented economic instruments can stimulate co-ordination between supply and demand, and provide regulatory or financial incentives or disincentives to act in a particular way.

Source: OECD (200), *Regions Matter*, OECD Publishing, Paris.

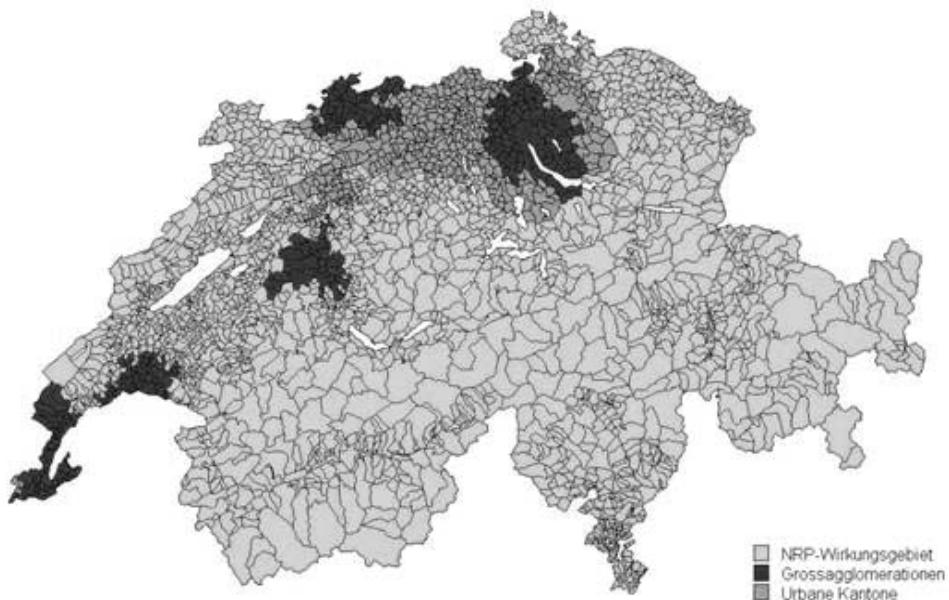
53. It also creates incentives for urban cantons to stimulate sectors in which they have no comparative advantage (such as agriculture, natural resources and food). As urban cantons also implement the NRP on their territory, but cannot cover most of their territory where arguably their more productive and innovative companies are located, they end up stimulating regional economic development in the limited areas within their canton that can be considered rural, mountainous or border areas. As a result, they may focus on sectors in which the canton is not necessarily specialised and does not always have a comparative advantage.

Figure 34. Coverage area previously used under the LIM



Source: Federal Statistical Office of Switzerland.

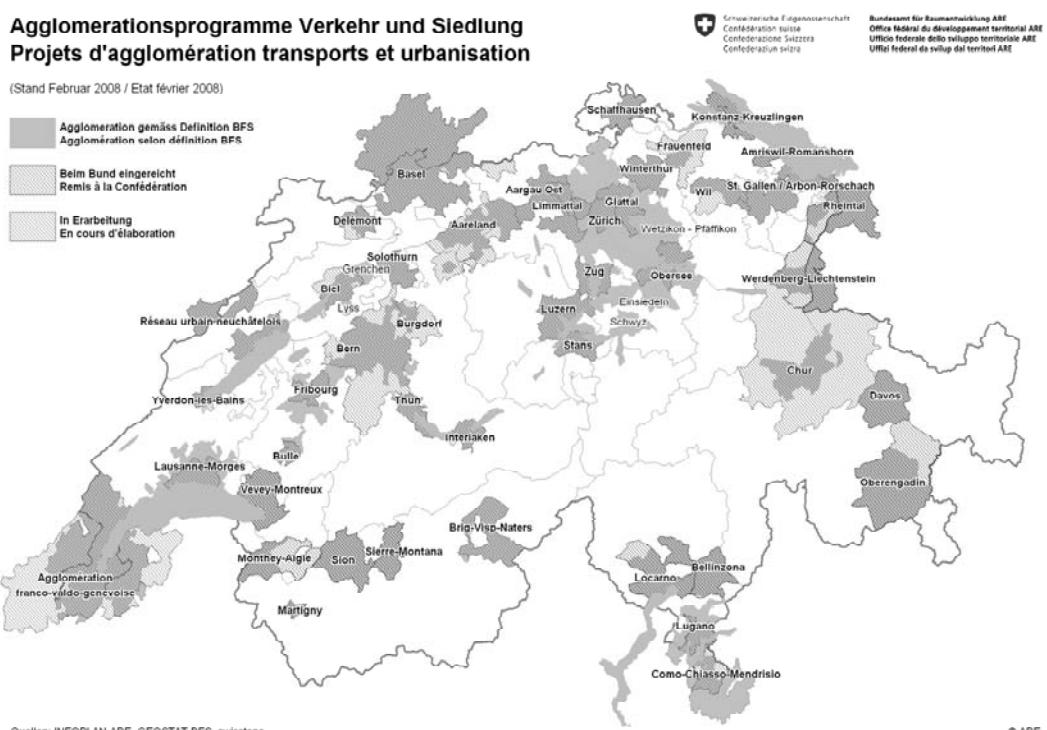
Figure 35. Coverage area of the NRP



Notes: Areas eligible for NRP support are indicated in green. Areas captured by agglomeration policy are indicated in red. Urban cantons, which are generally but not definitively excluded from the NRP, as indicated in pink.

Figure 36. Coverage area of agglomeration policy

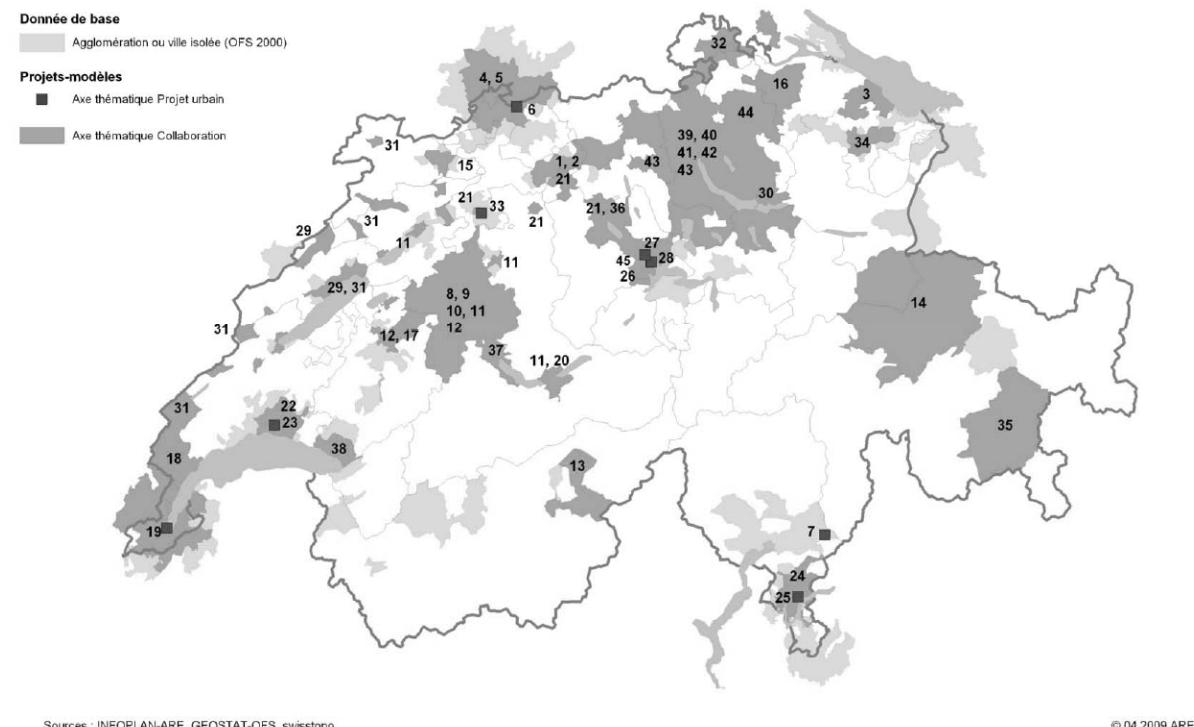
(1) Agglomeration programmes



(2) Model projects

Projets-modèles de la politique des agglomérations (2002-2009)

Agglomérations et communes impliquées dans les projets-modèles



Source: INFOPLAN-ARE, GEOSTAT-OPS, swisstopo

2.2.2. Increasing inter-cantonal policy co-ordination

54. **Functional socioeconomic areas in Switzerland are in many instances becoming wider than the areas defined by cantonal boundaries.** As highlighted in Chapter 1, activities of people and companies in many cases transcend cantons, with the emergence of a few stretched metropolitan areas including several centres. This has implications for policy: as people and firms increasingly cross cantonal borders on a daily basis, there is a need for close co-ordination of policies that could ease these movements, and where lack of policy co-ordination would result in constraints for mobility. Examples include transport, labour market, education and other public goods and services that have spillover effects to other jurisdictions. Experiences from OECD countries indicate various models to bring administrative structures closer to functional realities (Box 5)⁴. These models include merging existing sub-national authorities (e.g., mergers of municipalities in Denmark and Japan), creating new government tiers (e.g., creation of metropolitan authorities such as the Stuttgart Regional Association, the Greater London Authority and Metro Portland), and establishing intermunicipal functional bodies (e.g., the Montreal Metropolitan Community and the Greater Vancouver Regional District in Canada, agglomeration communities and urban communities in France). Some of these options, such as merging cantons, are politically not feasible considering the historically rooted role that cantons play within the Swiss institutional setting. The model that is widely used in Switzerland, and that might be further exploited, is inter-cantonal policy co-ordination.

Box 5. Bringing administrative structures closer to functional realities: examples of governance reforms in OECD countries

Municipal amalgamations: examples from Denmark and Japan

At the relatively heavy end are functional models whereby governance structures are re-shaped to fit or to approximate to the functional economic area of the region through the amalgamation of municipalities. Pro-amalgamationists contend that this formula can reduce duplication, produce economies of scale and scope for service provision, improve accountability, enable a more equitable sharing of the burden of taxation, and contribute to improved spatial planning capacity. In **Denmark**, on 1 January, 2007, after a four-year reform process, the number of municipalities was reduced from 270 to 98, with an average size of 56 000 inhabitants. After a series of public hearings and discussions in the second half of 2004, all Danish municipalities were asked to select the neighbouring municipalities with which they wanted to merge. The threshold size for the new municipalities was set at 20 000 inhabitants. Thirty-two municipalities (located largely around Copenhagen) remain the same because their total inhabitants exceeded 20 000. In **Japan**, while the government did not target an optimal size as part of the merger process, it did set a target of 1 000 municipalities. Japan encountered a variety of challenges during the latest merger due to community concerns about the naming of the new municipality, deciding whether to absorb or be absorbed by a municipality, determining the location of the new city hall, and setting the merger date. As such, explaining the context, justifications and benefits of mergers was important. Expected savings would come from reductions in personnel costs and investment savings. However, short-term expenditures are expected to rise over the next ten years, due to the integration costs in areas such as information systems and infrastructure development.

Creating metropolitan governments: examples from the Stuttgart Regional Association, the Greater London Authority and Metro Portland

Founded in 1994, the **Stuttgart Regional Association** represents 179 municipalities in the German Land of Baden-Württemburg, with around 2.6 million people. The Association's assembly is directly elected and its main responsibilities are regional spatial planning, transport infrastructure and operation, and regional economic development. The association is funded by municipal contributions (54%) and intergovernmental conditional grants from the Land of Baden-Württemburg (46%). Most expenditure (85% of the associations' budget of around EUR 260 million) goes to funding regional express trains and the regional transport body that manages buses and tramways. The **Greater London Authority** (GLA) was established in 2000. Unlike any previous local or regional government in the United Kingdom, it is made up of a directly elected Mayor and a separately elected assembly. The GLA's competences include a number of existing government programmes such as police, fire, transport and economic development. Other functions include environment, culture, media and sport, public health and inward investment. The GLA has no taxing power. The Metropolitan Service District, usually known as **Metro Portland**, is only directly-elected regional government in the United States. Metro is governed by a council president elected region-wide and six commissioners. Metro levies a property tax, but more than 50% of its budget comes from fees and charges levied on metropolitan-wide operated firms. Metro performs the following functions: 1) provides land use planning and is responsible for maintaining the Portland-area urban growth boundary, a legal boundary which separates urban from rural land, and is designed to reduce urban sprawl; it co-ordinates with the cities and counties in the area to ensure a 20-year supply of developable land; 2) serves as the metropolitan planning organisation for the area, responsible for the planning of the region's transportation system; 3) manages several park facilities, handles waste disposal and maintains landfills and recycling transfer stations.

Establishing intermunicipal functional bodies: examples from the Montreal Metropolitan Community, the Greater Vancouver Regional District in Canada, and agglomeration communities in France

A new regional body called the **Montreal Metropolitan Community** (CMM) was created by the government of Quebec in 2001 to handle responsibilities in areas of land planning, economic development, housing and public transit, environment and waste management. The CMM has a planning, co-ordinating and financing role and is managed by a council made up of 28 representative mayors. Its budget is essentially funded by contributions from member municipalities (roughly 88%) and grants from the provincial government (roughly 12%). The CMM has been particularly active in promoting an economic development strategy for the whole metropolitan area, including the creation of a regional fund, the production of a strategic vision and the elaboration of a cluster strategy, as well as lobbying towards higher levels of governments to get more funding for municipal infrastructure. Canada's **Greater Vancouver Regional District** (GVRD) is a voluntary partnership between over 20 municipalities that has achieved striking successes to deal with such challenges as rapid growth, underinvestment in infrastructure and so on. The GVRD has formal responsibility in providing metropolitan-wide services such as drinking water,

sewage treatment, recycling and garbage disposal, as well as regional planning and environment protection. It can also choose to take on other roles on a voluntary basis. Municipal organisation in **France** is characterised by fragmentation. With the introduction of three laws, the government developed a mechanism to encourage the creation of Agglomeration Community (a public inter-municipal cooperation body for urban areas of over 50 000 inhabitants grouped around a central city with at least 15 000 inhabitants) and the Urban Community (a public inter-municipal co-operation institution for urban areas with over 500 000 inhabitants). These joint intermunicipalities bodies are directed by councils composed of representative municipalities and carry out such functions as spatial planning, economic development, public transport, environment, social housing, waste disposal, etc. These authorities enjoy their own tax revenues from a common business tax and receive some financial assistance from the central government.

*Source: OECD (2009) *Regions Matter*, OECD Publishing, Paris, and OECD (2006), *Competitive Cities in the Global Economy*, OECD Publishing, Paris.*

55. **With the advent of NPR, SECO initially expected the cantons to elaborate inter-cantonal implementation programmes but this did not materialise in the expected way.** Approximately 25% of NRP funds were set aside for 2008-2011 to fund intercantonal projects (CHF 23-31 million from Pillar 1, excluding INTERREG), which is consistent with a 2002 OECD recommendation to provide financial incentives for intercantonal collaboration. However, funds have been left unused due to a lack of projects. Cantons' priority appears to have been launching their own programmes prior to embarking on more complex collaborative initiatives. The underutilisation of the funds suggests a need to promote the use of existing funds, build capacity to identify, design and implement appropriate cross-cantonal interventions, and possibly to increase the amount of funding available to increase the incentive effects. Some steps have already been taken. For example, the lack of intercantonal projects was the subject of discussion at a 2009 regional policy specialists' conference (i.e. the joint body of cantonal heads for NPR). For the 2012-2015 programme period, drafting of cross-cantonal strategies for cantonal implementation programmes is to begin earlier than in the past.

56. **Intercantonal co-ordination mechanisms often remain sectorally focused, which leaves a gap for more comprehensive co-ordination for economic development.** Swiss cantons tend to be small, and in some cases smaller than the scale necessary for efficient public service provision. Horizontal co-operation among cantons is therefore considered to be more intensive in Switzerland than in other federal states (Bochsler, 2009). Three major mechanisms currently in use, (i) cantonal conferences, (ii) intercantonal concordats, and (iii) cross-border co-operation, have played a role in enhancing horizontal co-ordination, but NRP could facilitate further co-operation across cantons for broader economic development.

(i) Building on inter-cantonal conferences for economic development

57. **Inter-cantonal conferences have proved valuable for promoting horizontal co-ordination for economic promotion.** Bringing together representatives of cantonal governments facilitates information exchange, as well as joint identification of problems and solutions. In addition to the national Conference of Cantonal Governments (CdC), inter-cantonal conferences of Department directors are also organised regionally. The first regional conference was established in 1964 and the most recent (in the metropolitan area of Zurich) in 2009. The membership of conferences is frequently overlapping, which can sometimes complicate the choices of interests to be defended. While each canton has its own economic development (promotion) agency, some cantons have come together to form regional agencies to attract businesses and investment to the supracantonal regions. One example is the Greater Zurich Area AG, launched in 1999 (originally named the Greater Zurich Network)⁵. More recently, six cantons of the western Switzerland Department directors' conference for economic development (CDEP-SO) agreed to establish a joint structure for identifying, attracting and securing foreign business investment (Box 6)⁶. The

Conference of Cantonal Economic Directors has played a particularly important role in connecting the Confederation and cantons in terms of regional policy (EPRC, 2009). The Conference was consulted on the elaboration of the law establishing the NRP as well as on multi-annual programme, and should remain a key partner in the further programming periods of the NRP.

Box 6. Regional economic development promotion: GGBa

Launched after 18 months of negotiation in January 2010, the Greater Geneva Berne Area (GGBa), replaces three existing structures and brings together all but one of the cantons of the regional directors' conference for economic development (CDEP-SO): Bern, Geneva, Fribourg, Neuchâtel, Valais and Vaud. Headquartered in Lausanne, the new organisation will promote western Switzerland internationally, with a priority on three markets: the US, France and Germany. Markets in Italy, India, China, Brazil and Russia will also receive attention. Its budget of CHF 4.1 million (not covered by the NRP budget) is divided among the participating cantons based on an analysis of factors contributing to locational attractiveness. To account for the positive economic effects generating by businesses locating in the different cantons, "a system of retrospective financial re-allocation, based on the total payroll of the incoming companies, will be in place from 2012 onward." Cantons will maintain their individual economic promotion organisations and will each receive information from GGBa regarding prospects. Cantons will then decide whether or not to compete or cooperate to attract investment.

Sources: Curtis, M. (2009), "New agency set to promote Western Switzerland", *Swisster*, 10 Dec 2009; Unger, P-F. (2009), "The Greater Geneva-Berne Area is born!" Press release, 2 July 2009, Conference of Ministers of Economic Affairs of Western Switzerland (CDEP-SO)

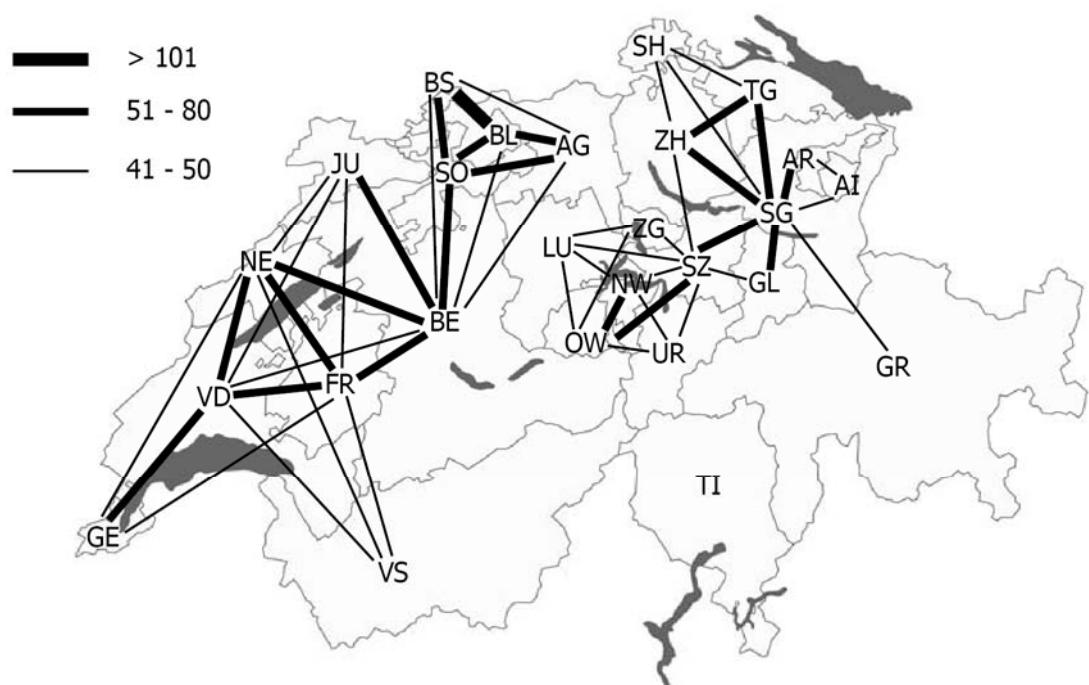
(ii) Learning from the experience of inter-cantonal concordats

58. Inter-cantonal concordats tend to be narrow in scope and technical rather than strategic in nature. According to the BADAC database, as of 2003, there were 733 intercantonal concordats among all 26 cantons. Very few cover all 26 cantons and few incorporate multiple cantons, most likely because revenue-side competition is common among cantons. Most intercantonal concordats are bilateral tax treaties aimed at eliminating double taxation. They tend to focus on fields where co-operation is pragmatic, e.g. fishing rules for inter-cantonal rivers or lakes; health services; maintenance of inter-cantonal roads; inter-cantonal police cooperation, especially in the case of large events, etc. (Bochsler, 2010). In addition they focus on education, science and culture. Some pairs of cantons count more than 100 each, while Valais and Appenzell Ausserrhoden have only 16 ties. The density of concordats is one indicator of the importance of supracantonal functional areas (Figure 37). In seeking to explain factors that facilitate intercantonal concordats, Bochsler (2008) finds geographical proximity to be a strong positive predictor⁷. There is a positive effect in the area of infrastructure, environment, traffic and a negative effect in the area of finances/taxes⁸⁹. Inter-cantonal concordats do not correspond completely to the functional realities that are emerging in Switzerland. In the context of increased interlinkages between the metropolitan areas of Zurich and Basel, the lack of concordats between these cantons (and the cantons belonging to their wider metropolitan area) is noteworthy.

59. A more strategic approach to inter-cantonal concordats could be stimulated. Although some cantons increasingly recognise that they are too small to be competitive internationally if they act alone and they could collectively tap into economies of scale, the binding nature of intercantonal concordats may remain off-putting for a type of collaboration which has the potential to impact cantonal revenues. The lack of a binding cross-cantonal collaboration which integrates across sectors is partially filled via agglomeration programmes (see discussion of agglomeration programmes in section 2.2.3 below), but could be further narrowed in the context of NRP programme agreements. A strategic approach could build

on the sectoral concordats developed so far, and would enable broader economic co-operation that better takes emerging functional economic realities into account.

Figure 37. Map of intercantonal concordats



Source: Map from Daniel Bochsler and Samuel Thomi, in Bochsler, Daniel (2008) 'A QAP Network Analysis of Intergovernmental Cooperation between Swiss Cantons', in Thomas Friemel (ed.), Why Context Matters. Applications of Social Network Analysis (pp. 141-159). Berlin: Springer.

(iii) Facilitating cross-border co-operation¹⁰

60. **Although the NRP actively supports cross-border activities, various factors narrow the scope of such activities.** Switzerland is bordered by five countries: France, Germany, Austria, Italy, and Liechtenstein. Bringing the EU Territorial Cooperation programmes under the NRP umbrella guarantees a budget for INTERREG (which may not have received parliamentary support as a separate law) and holds the prospect of improved co-ordination between commitments for regional and cross-border programmes. However, Swiss participants face a number of obstacles. First, there are *organisational differences* between the programmes. INTERREG and the NRP have different goals, calendars, and decision making bodies which have to be harmonised. The former is organised in Programme regions which often cover several cantons and have established structures. At the cantonal level, the individuals responsible for INTERREG and the NRP are not necessarily the same or even located in the same cantonal service. Second, there are *funding differences*. The EU makes substantially more financing available for INTERREG projects than does Switzerland through NRP. The contribution from the European Regional Development Fund (ERDF) towards cross-border cooperation amounts to EUR 215 million, representing an increase of 120% from 2000-2006 (Europa, 2007). Finally, in bringing INTERREG under the scope of the NRP, projects must

conform to both European and Swiss criteria in order to get federal NRP funds. For example, this means that some projects are eligible for funding under European rules (e.g. purely ecological social programmes) but ineligible for NRP funds (which must conform to the thematic priorities in Table 8 earlier). However, transnational projects (INTERREG IV B, ESPON, URBACT) can receive NRP funding even if they do not match the mentioned criteria on condition that they are of national interest. Also, cantons can support projects which do not conform to the Swiss criteria with their own budgets.

61. A number of cross-border agencies and commissions can be used to promote further cross-border collaboration. For example, cross-border agencies exist for Upper Rhine, Lake Constance, Graubünden, Ticino, Valais, Lake Geneva, and Jura arc. Targeted policy areas include environmental protection, shipping, fisheries, and hydroelectric power; road and rail traffic; urban and rural development; civil protection; and taxation of cross-border commuters (Swiss Federal Department of Foreign Affairs, n.d. b). In certain areas, cross-border co-operation requires formal agreements between governments, and in some instances this has led to the creation of international joint government commissions. First, consultative commissions can provide a platform for exchanging information between actors in neighbouring regions and formulating recommendations to the national governments (albeit without any decision making authority). Such consultative commissions currently exist in the Geneva region¹¹ (initiated by the local authorities) and in the Basel region¹² (based on impetus from the private sector). Second, special commissions can be created via bilateral treaties to address specific topics such as culture, public transport fees, environmental protection, and spatial planning. Approximately 40 special commissions are in place to date. Finally, cross-border co-operation can also take place at the municipal level and via non-governmental contacts such as between chambers of commerce, chambers of agriculture, employer federations, trade unions and other organizations on either side of a border (Swiss Federal Department of Foreign Affairs, n.d.). Experiences in OECD countries suggest that while cross-border regional co-operation is strongly supported by the EU and is considered as a bottom-up tool for reinforcing integration among EU members, specific programmes have not automatically resulted in the establishment of new public-private alliances to address regional and local development issues. At its most successful, collaboration has worked mainly where public agencies have been strongly involved and had a direct say in project definition and implementation (Table 10). This pattern is most often visible in North America for example, where governance structures tend to be more flexible, oriented towards a few pragmatic purposes and driven by the private sector and local governments.

Table 10. Thematic categories of trans-border co-operation in OECD countries

	Regional identity or common value	Regional identity or common value	Economic interdependency (price factor)	Economic interdependency (technology)
Examples	TriRhena, Öresund	Baltic Region, US-Canada	San Diego-Tijuana	US-Canada
Leader	Public sector (especially local government)	Public sector	Private sector's strong involvement	Private sector's strong involvement
Scope	Multi-faceted (place-based integrative approach)	Narrow (function-based approach)	Narrow (function-based approach)	Narrow (function-based approach)
Geographic scale	Clear-cut	Fuzzy	Fuzzy	Fuzzy
Temporal stability	Stable	-	Unstable in the long run	Stable
Institution	Mono-centred hierarchy, multi-faceted	Poly-centred network, issue-focused	Poly-centred network, issue-focused	Poly-centred network, issue-focused

Source: OECD (2009), Trans-Border Urban Co-operation in the Pan-Yellow Sea Region, OECD Publishing, Paris, Table A.2 p.217

2.2.3. *Improving co-ordination between NRP and other policies*

62. **Regional policy in a broader sense largely depends on introducing regional angles in sectoral policies.** OECD countries have experimented with various mechanisms to co-ordinate national policies horizontally at the regional level. For instance, Canada has created federal regional development agencies with catchment areas extending beyond provincial borders. The UK has placed Government Offices and regional ministers in nine regions, which co-exist with regional development agencies. In France, Contrats de Projet Etat-Régions are used to identify and integrate sectoral interventions at the regional level (Box 7).

Box 7. Integrating across sectors at a regional level: examples from Canada and the UK

Canada: Federal regional development agencies

The Government of Canada decentralised its approach to regional development in the mid-1980s. The move toward decentralisation was accompanied by a reorientation of policy away from reducing regional disparities to encouraging the development of regions' unique potential, as well as the introduction of federal regional development agencies (RDAs). Canada has three RDAs, with catchment areas that span multiple provinces: Western Economic Diversification Canada; Canada Economic Development for Quebec Regions; and the Atlantic Canada Opportunities Agency. Each agency is represented in the federal Cabinet by its own Minister (on par with other federal ministers), and receives discrete, stable, base funding. The agencies' Ministers must take national policies into account in managing their portfolios, and at the same time represent regional interests through their participation in the federal Cabinet. RDAs are publicly accountable, providing forward-looking plans and past-year performance reports to Parliament each year.

UK: Regional ministers and government offices

National government interests are represented in nine English regions and regional interests are communicated to the central government through a variety of mechanisms. There are Government Offices (Gos) in each of the nine English regions. These offices bring together the interests of 11 departments of national government in each region and communicate regional needs and interests back to the central government. In addition, in 2007, the Offices were complemented by the appointment of nine regional ministers. These are existing ministers, who – in addition to attending to their departmental ministerial duties – are to ensure a strategic direction for the region in terms of national policy and also represent regional interests in national government.

Sources: "TDPC Meeting at Ministerial Level: Canada's Speaking Notes", accessed April 2010 at <http://www.oecd.org/dataoecd/35/60/42594078.pdf>; Wright, I. (2009), Speaking note for OECD Ministerial Meeting Investing for Growth: Building Innovative Regions, Session II – Mobilising Actors and Capacity For Regional Development accessed April 2010 at <http://www.oecd.org/dataoecd/61/37/42562964.pdf>; "The Governance of Britain" presented to Parliament by the Secretary of State for Justice and Lord Chancellor, July 2007 accessed April 2010 at <http://www.official-documents.gov.uk/document/cm71/7170/7170.pdf>

63. **Intersectoral co-ordination is critical to achieve the impact intended by the NRP.** The NRP's annual budget of CHF 90 million is dwarfed by sectoral spending in key areas and fiscal equalisation transfers¹³. Improving the impact of NRP is not necessarily linked to a need for additional funding but more effective co-ordination with (and leveraging effect on) other policies. Given the important variations in targeted areas, key actors and main instruments across policies in Switzerland (Table 11), Pillar 2 under NRP specifically aims to formally co-ordinate the NRP with different sectors. Agreements are sought to substantiate collaboration and to make co-operation more binding through better co-ordinated enforcement and development of the sectoral policies, permanent exchange of information, identification of cross-sectoral synergies, and development of common projects. Thus far, agreements have been established in three areas: innovation (to deepen co-operation in area of technology transfers from universities and SMEs); environment (to create examples of good co-operative efforts in the value chain from forest

treatment to the market); and tourism (to co-operate with the tourism lobby in Switzerland). It will be particularly important to streamline joint programmes between the NRP and tourism policy considering the frequent overlaps of instruments and opportunities to promote structural adjustment and strengthen regional value chains. Monitoring information could prove useful in assessing the short- and medium-term usefulness of the agreements, as convincing potential partners of their value is presently an important obstacle to establishing them. Sufficient joint financing is also important if joint projects are to be developed.

Table 11. The Swiss policy environment for the NRP and selected sectoral policies

	NRP	Agricultural policy	Agglomeration policy	Spatial planning	Tourism	Export promotion and location marketing
Targeted areas	Mountainous and rural areas and border regions	Individual farmers	Urban agglomerations	Cantons and municipalities	« Destinations » with variable geometry at municipal and regional level	National reach
Key actors	SECO, cantons	FOAG (Federal Office of Agriculture)	ARE, SECO	ARE	Federal government, partly outsourced to Suisse Tourisme and Swiss Society for Hotel Credit	OSEC Business Network Switzerland
Main instruments	Federal multi-year programme 2008-2015 Cantonal implementation programmes	Direct payments Model projects	Agglomeration programmes Infrastructure Fund	New Spatial Concept of Switzerland Cantonal plans	Innotour (supporting innovation and cooperation in tourism) Municipal plans	Information and consulting services

64. **Cross-sectoral co-ordination efforts in the right direction have helped to minimise programmatic redundancy and increase synergies among federal activities.** In addition to Pillar 2 activities, SECO held bilateral discussions with multiple federal offices to co-ordinate cantonal strategies with other sectoral policies (i.e. CTI/knowledge and technology transfer, agriculture, territorial development, energy, parks, forestry, agglomeration policy and tourism). A second round of co-ordination meetings was held in spring on 2009, following receipt of cantons' annual reports. Results included: pursuit of follow-up studies (e.g. tourism, agglomeration policy); common influence on federal ministers tasks (e.g. agglomeration policy); influence the elaboration of sectoral strategies or legislation (e.g. spatial planning); general information exchange (e.g. sustainable development); co-ordination of projects or enforcement practice (e.g. tourism); co-operation within model projects (e.g. rural development); synergies from common instruments (e.g. wood). Finally, the "Conference of the Confederation for Territorial Organisation" (COT) under the joint authority of SECO and ARE also brings together federal actors four times per year and a workshop on a relevant topic of interest is held annually. At the same time, notable gaps persist in three key areas: agricultural and rural policy; agglomeration policy; and spatial planning. (The relation between the NRP and regional innovation policy is addressed in depth in Chapter 3.)

NRP and agricultural and rural policy

65. Switzerland currently runs in parallel an agricultural policy and the NRP, which *de facto* focuses primarily on rural areas. In 2002, the OECD recommended that a sustainable rural development strategy be developed, based on the exploitation and valorisation of natural and cultural amenities. Instead, multiple policies are currently pursued through various sectors that have an impact on rural areas. Among them, agricultural policy is particularly important and adopts a focus on sustainable development. The primary tool of Swiss agricultural policy is direct payments to farmers (Box 8), but other existing tools contribute to rural development. For example, funds are provided for agricultural roads, irrigation and the improvement of farmland, although this represents a relatively small share of the agricultural policy budget. Eighty percent of these investments are made in hilly and mountainous areas (OECD, 2009). At the same time, the NRP targets rural, mountainous and border regions, and runs its own three pillars of instruments. The two policies therefore often target similar geographic areas but different objectives and different actors through separate thematic actions.

Box 8. Overview of Swiss agricultural policy

According to the federal Constitution, agriculture should help to ensure food supplies, conserve the landscape, and facilitate decentralised settlements via a sustainable and market-oriented policy. The main tool of Swiss agricultural policy is direct payments to farmers, which constitutes over 70% of the agricultural budget. Payments are not linked to production, but rather function largely as income support. Payments are available for agriculture/farming as opposed to agro-tourism (for which loans are available). The use of direct payments decoupled from product prices represents a substantial shift in policy. Beginning in 1993, Switzerland instituted a shift toward less government control, encouraging farmers to be more entrepreneurial, making farming more environmentally friendly, and reducing border controls. At the outset of the reform process, the largest portion of the budget was dedicated to market support. The reform introduced direct payments to compensate farmers for their "public and ecological services". Price guarantees were gradually eliminated. The shift away from market intervention has meant an overall decline in farmers' incomes, with farmers facing prices that are approximately 25% less than they were a decade ago. In response, farmers have increasingly diversified their portfolios to include agrotourism, leisure activities, social services, education, and other activities. Productivity in farming as also risen. Today agriculture employs 2.2% of the Swiss population and contributes to less than 1% of GDP. Total public expenditure on agricultural policy for the period 2008 to 2011 is CHF 13 499 million.

Sources: Federal Office for Agriculture (FOAG) (2004), "Swiss Agricultural Policy: Objectives, tools, prospects"; Federal Office of Agriculture (2009), "Swiss agriculture on the move: The New Agriculture Act - Ten years on".

66. While regular informal exchanges of ideas and mutual support for projects have been put in place, co-ordination between agricultural policy and the NRP could be enhanced. Informal relationships may be more efficient and effective in the short term. In the long term, it is critical to strengthen and sustain co-ordination. An important mechanism to enhance co-ordination among sectoral policies with an impact on rural areas was the 2006 creation of the "Federal Network for Rural Development", which is jointly financed by four federal offices (Economy, Agriculture, Environment, and for Spatial Development). The Network currently operates 13 pilot projects and is expected to endure through 2011. This experience of collaboration offers an encouraging starting point to be extended. The initiative of "regional development projects" (PDR) could also be further extended (Box 9). First launched in 2007, this initiative aims at encouraging bottom-up common projects between farmers and representatives of related sectors such as trade, tourism, the timber industry and forestry. Because many ideas tend to fail in an early stage due to a lack of professionalism, persistence and/or financial resources, the Federal Office of Agriculture has started to provide financial assistance for professional coaching (e.g., feasibility studies). Expanding this initiative can help build a more multifunctional and innovative rural strategy within the NRP framework.

Box 9. Regional development projects (PDR) under the Agriculture Act

The Federal Office of Agriculture offers financial assistance (up to CHF 20 000, to be matched by co-financing from the applicants) for professional coaching for a one-year period. Professional coaches are consultants or advisers with a technical, engineering, environmental and business background. Once the coaching has led to a successful business plan, the regional development project runs under the lead of the canton (Cantonal Office for Agriculture), which submits a formal request to the Federal Office of Agriculture. A contract is signed between the federal and the cantonal offices. The cost of the project must be shared between the Confederation (40%), the canton (32%), and the private sector. Many projects currently running or under preparation concern agro-tourism (e.g. Brontallo, Urnäsch, Einsiedeln, Disentis, Hochstamm-Projekt Seetal, Klettgau, Leukerbad) and other activities such as regional products and food processing.

67. Agro-tourism has emerged as a promising avenue to diversify the economy of rural areas in Switzerland. At the national scale, travel and tourism are expected to make a direct contribution of 5.8% of GDP and to employ 351 000 individuals in 2010, *i.e.* 7.8% of total employment. Many of the destinations for which Switzerland is attractive on national and international markets are located in rural and mountainous areas, which makes tourism a key activity for areas targeted by the NRP. Agro-tourism has been encouraged as a way to diversify the incomes of Swiss farmers facing declining product prices by offering accommodation and tourism activities on their farms. The federal government also provides farm households with credit and investment aid. Looking forward, the aim is to broaden the existing nationwide agro-tourism associations and platforms to include other stakeholders, to better co-ordinate the market performance of agro-tourism among its providers, to offer training on agro-tourism, and to encourage branding. Goals include improved co-ordination among partners, linkages with other parts of the tourism sector, creation of agro-tourism clusters, and the establishment of a common market performance.

68. The NRP could be instrumental in strengthening agro-tourism as a bridge between agricultural policy, tourism policy and economic development policy. As indicated in Table 12 below, almost all NRP cantonal implementation programmes focus on agriculture, tourism and the combination of both¹⁴. The elaboration and evaluation of NRP cantonal implementation programmes could adopt a more strategic approach to financing and supporting areas that demonstrate clear comparative advantages in these fields. This would require mechanisms to streamline the stimulation of certain sectors in order to avoid dilution of efforts and funds. For example, experiences in Italy where agro-tourism has grown into a major source of rural income (Box 10) have raised questions regarding potential declines in service quality once public support ends and the need to increase the efficiency of agro-tourism policy. Thus, if agro-tourism is to be more than income support for Swiss farmers and to have long-term viability for the regional economy, ex-ante assessment of projects within NRP implementation programmes could have a clearer focus on examining: what factors affect the demand for and utilisation of agro-tourism offerings; how much public money is needed, for what duration of time, and for what purpose (e.g. infrastructure investment, training and education, etc.); how the level and quality of services can be sustained in the absence of public support; how private sector participation might be garnered, at what stage, and for what purpose; and how linkages between agro-tourism and other regional industries/services can be strengthened.

Table 12. Main economic sectors mentioned in NRP cantonal implementation programmes

	ZH	BE	LU	UR	SZ	NW	OW	GL	AR	AI	SG	GR	AG	TG	TI	VD	VS	NE	JU	SH	FR
Tourism	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
Natural resources	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
Energy	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
Manufacturing	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
Health	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
Agriculture	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
Recreation	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
Aviation	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
Food	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
High tech	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
Commercial services	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
Retail and logistics	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
Metallurgy	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
Machinery	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
Culture	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
Education	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*

Source: Note: The implementation programmes of Obwalden, Basel-Stadt and Basel-Landschaft did not mention main economic sectors to stimulate.

Box 10. Agro-tourism in Italy

Agro-tourism in Italy dates back to the 1950s, but with little time or skills to engage in the tourism trade, there were few farms with a guest house in Italy even by the 1980s. The situation changed in the 1990s and 2000s. In 1991, the European Union promulgated EU-Regulation 2092/91, a code of conduct for EU farmers aiming to become an agro-tourism destination. In Italy, new national approach and regional laws facilitated access to European money and revealed fiscal advantages for agro-tourism, which grew quickly. Access to EU LEADER funds played an important role in the growth of Italian agro-tourism and significant amount of these funds were absorbed by agro-tourism. Today agro-tourism represents an important source of income in rural Italy and offers rural regions the opportunity to develop a sustainable form of tourism. There are approximately 18 000 farmhouse resorts and in 2007, industry turnover was EUR 1 008 million. For residents, agro-tourism provides an additional income, both through room and board sales and through direct-to-consumer sales of agro-food products (cheese, wine, olive oil, fruit products, vegetables, meat and poultry). It attracts tourists that want to learn more about local culture and economic activities, thus providing a stimulus for forestry and environmentally friendly activities. It also plays a revitalising role in the most deprived areas, generating additional income for farm household and local communities with few other substantial economic activities.

Sources: Extracts from Box 1.2 "Agro-tourism in Italy" from OECD (2009), *Rural Policy Review: Italy*, pg. 39; "Tourism: Good news for agritourism", published at "Wanted in Rome" 14 Nov 2008

69. Considering the introduction of local agro-environmental programmes and private sector funding for landscape preservation within the NRP could also provide a valuable link between agricultural policy, environmental policy and economic development policy, particularly regarding challenges of an ageing rural population and opportunities to promote a green economy. As these challenges will become increasingly pressing, they might deserve prioritised focus for the next NRP-period after 2013. Agro-environmental programmes might help in dealing with these challenges; good use could be made of experiences in other OECD countries within this field. For example, Austria has implemented interesting mechanisms to promote agro-tourism (Box 11). One initiative has been to use farming styles to improve the effectiveness of agro-environmental programmes by creating customised support packages and in advising and addressing farmers. Such local schemes can complement existing national and EU schemes, thus refining the policy instrument by taking into account locally preferred environmental outcomes. A second initiative has consisted in financing agricultural landscape preservation through a contribution from the agro-tourism sector, based on the fact that agricultural amenities such as idyllic landscapes and a well-preserved nature are key factors to maintain the business activities of the tourism sector.

Box 11. Local agro-environmental schemes and private funding of landscape preservation: the experience of Austria

Local agro-environmental schemes

Extensive small-scale agriculture increases the utility of those who spend leisure time in the Alpine regions in Austria, as it offers a pleasant landscape for recreational purposes. Farmers will mow the grassland, take care of the rural trail and road network, preserve the vegetation along the waterways and cultivate pastures. In general, farmers do not receive direct monetary compensation in return for these non-commodity outputs, and therefore their availability cannot be guaranteed, as their provision is based on altruistic or ethical motives. Since the number of full-time farms in mountain areas is declining rapidly, several tourist-intensive communities in Austria have opted to offer an incentive for the provision of landscape services in the form of direct compensation to local farmers. These compensation payments are voluntary public expenditure by local governments, and the amount has to be agreed by local community councils. In the assignment of seats in municipal councils in Austria, political parties take the structure of the local population into account. Successful bargaining outcomes appear to be tourism-motivated. A prerequisite for successful bargaining outcomes is that the benefits are monetized in the form of profit for hotel-keepers and tourist taxes. The average willingness to pay of tourists was calculated at EUR 0.67 per day. Local agro-environmental programmes are collective programmes that are binding for all farmers. Given the uniform compensation scheme, individual farmers choose whether to accept the programme or not. In 2000 farmers received on average EUR 241 per farm or EUR 34 per hectare of agricultural land. Local schemes were found to be an important supplement to EU and national agro-environmental schemes: an increase of EUR 1 in the national scheme increases local compensation by EUR 0.2. The national scheme apparently has not been a sufficient incentive for farmers to provide the recreational and conservation services desired by local communities, as a national programme cannot be expected to take into account all community-specific needs.

Financing landscape conservation by agro-tourism in the Weissensee area

The community of Weissensee is located in the Alps in the South of Austria. Weissensee is one of Austria's most tourist-oriented communities in which agriculture is closely connected to the tourist industry. The agricultural landscape represents an important input factor for the production of tourist services. In order to protect the rural landscape a landscape preservation program has been set up and a private organisation, called the Landscape Conservation Organisation. This organisation has set up comprehensive production and landscape guidelines to be followed by farmers seeking monetary compensation for non-commodity outputs. Based on a set of criteria, the objective degree of difficulty in cultivation at the farm level is determined and this is translated into a point system. The payment of an individual farmer depends on the multiplication of his score with the number of hectares under cultivation. In order to be entitled to payments, a farmer has to respect several conditions with respect to livestock density, not using chemical fertilizers etc. All 26 farmers in Weissensee participate in the programme. The average monetary compensation per farmer was EUR 1 677. The landscape preservation programme is financed by payments of tourists spending their vacation in the areas. Around 5% of the local tourist tax is directly transferred to the Landscape Conservation Organisation for compensating landscape cultivation. In 2001 this amounted to EUR 25 500. The organisation received additional revenues of EUR 18 100 from the community budget.

Source: OECD (2008), *Rural Policy Review: the Netherlands*, OECD Publishing, Paris

NRP and agglomeration policy

70. **Although the incorporation of urban areas into regional policy was recommended by the OECD in 2002, agglomeration policy and the NRP remain formally separate, largely for political reasons.** Due to the short geographic distances between Swiss rural and urban areas, policy linkages between them are crucial. Yet, tensions have sometimes plagued the relationship between rural and urban areas as the two often compete for attracting credits and public funding. There is an organisational overlap between the NRP and agglomeration policy as the latter is the joint responsibility of the Federal Office for Spatial Development (lead) and the State Secretariat of the Economy (SECO). While the target areas for agglomeration policy and the NRP are generally different, small and medium-sized agglomerations can essentially benefit from both the NRP and model projects mechanisms¹⁵. Informally, “model projects”

represent one venue where urban-rural connections can be explored (Box 12). Of the 50 model projects currently funded, approximately 8 to 10 address the urban/rural theme. The model projects programme is co-ordinated with NRP projects in order to prevent a duplication of effort and to ensure continuity.

Box 12. Overview of Swiss agglomeration policy

Switzerland launched agglomeration policy in late 2001, triggered by the new Article 50 of the federal constitution that obliges the Confederation to consider the situation of urban as well as rural areas. The policy aims to improve the economic appeal of towns and cities, to maintain the level of quality of life, to limit urban sprawl, and to maintain the heterogeneous mix of decentralised urban areas (polycentrism). There are 50 statistically defined agglomeration areas, which can be divided among large (1+ million inhabitants), medium, and small (20 000 inhabitants) agglomerations.

The federal budget for agglomeration policy is CHF 11 million and uses three policy tools.

First, for the purposes of programming, each agglomeration area establishes its own perimeter (which may differ from the statistical definition of agglomeration areas) and develops an **agglomeration programme**. This relatively new instrument is intended to facilitate collaboration and co-ordination within conurbations (among cantons, cities, and communes). Participants are expected to identify challenges, set priorities, and solve problems jointly among administrative units. To encourage communes to use this tool, the central government has offered to share the costs for the conurbation transport system, provided that the agglomeration programme demonstrates alignment of urban issues and transport planning. A programme agreement ("convention-programme") is established between the Confederation and the co-ordinating body which establishes the contractual terms for the different parties. The Confederation provides 30% to 50% of the overall programme cost, based on an assessment of the agglomeration programme.

Second, agglomeration areas benefit from an **infrastructure fund** (a total of CHF 20.8 billion over 20 years, including CHF 6 billion set aside for agglomeration transport projects). The existence of an agglomeration programme is a precondition for accessing these funds. To date funds have been provided largely for transportation (e.g. the completion of the national road network, urgent agglomeration transport projects, and major roads in mountainous and peripheral regions). Funds released beginning in 2011 will target national road congestion hotspots and agglomeration programmes.

The third policy tool is a fund for **model projects**. The federal government provides up to CHF 50 000 annually for 3 to 6 years for innovative projects. Over 50 projects have been funded since 2002, with most focusing on collaboration among actors. In a number of cases actors developed model projects precisely to construct collaborations and create an agglomeration programme to access the infrastructure fund. This is consistent with the 2002 OECD conclusion that "the main issues for federal metropolitan policy are therefore of a more institutional than financial nature. Mainly they relate to stronger support for metropolitan collaboration, through support of partnerships whose objective is to provide metropolitan-wide public services".

Sources: Tobler, G. (2004) "Agglomeration policy in Switzerland" in Spatial planning in Switzerland" report of the 40th World Congress of ISoCaRP – International Society of City and Regional Planners in Geneva, pp. 13-15; Tobler, G. (2009), "Federal Agglomeration Policy", presentation to OECD mission, November 2009; SECO (2009), « Etude de monitorage OCDE 2010, Nouvelle politique régionale : Rapport général », Mai 2009; OECD (2002), "Territorial Review: Switzerland", OECD: Paris, pg. 144; OECD questionnaire, 2009.

Box 13. Agglomeration programmes

Agglomeration programmes have an open-ended definition and can include anything from settlement and transport to political issues such as integration of foreigners, education, health, youth, culture, safety, social matters, sport, tourism and the promotion of economic development. The first-generation agglomeration programmes, however, are devoted primarily to the issues of settlement and transport. They are the precondition for the agglomerations to receive federal funding from the Infrastructure Fund (hardware, basic infrastructure). On this basis, the projects, within the framework of regional policy, focus on the enhancement of regional economic potential (software, intercompany, pre-competitive) and promote development structures that generate added value.

ARE and SECO organized an exchange of views in April 2009 on agglomeration policy and the new regional policy (NRP), in which small and medium-sized agglomerations described their experience with the overlap of the two social policies with reference to specific projects (SECO a& ARE 2009).

- In Castione-Bellinzona, economic development projects are being encouraged in an interdisciplinary approach (location development). While spatial planning (directive plan, usage zoning plan) creates the spatial premises, the agglomeration programme makes it possible to plan and finance the infrastructure through the Infrastructure Fund, and regional policy contributes to improving the competitiveness of the economic development hub and its functional region (cooperation between centre and periphery).
- In the canton of Lucerne, the agglomeration programme and regional policy are each used for complementary spatial types (city-countryside). The Lucerne countryside also benefits from the increased attractiveness of the centres and the main development axes (agglomeration policy, model projects, etc.) since it capitalizes on and enhances stimuli from the city (as part of the new regional policy, tourism promotion, etc.).
- In the canton of St. Gallen, five agglomeration programmes (international and cross-border) are underway, which are all mainly concerned with regional policy (canton as a whole). The regional organizations that implement agglomeration policy and the new regional policy are currently being reorganized (see question 4.21). Overlapping projects concern mainly workplaces and integrated location development.
- The canton of Vaud participates in five agglomeration programmes (both intercantonal and cross-border), of which two (Agglo franco-valdo-genevoise und Lausanne-Morges) are by and large excluded from the NRP and three are covered by the NRP (Yverdon, Vevey-Montreux, Aigle-Montheys). To take the example of Yverdon: agglomeration policy, which provides the urban planning and transport framework to ensure Yverdon's competitiveness (Infrastructure Fund), fits in with the NRP, which strengthens Yverdon as an economic centre by exploiting the potential of industry, trade and universities.

71. Agglomeration policy mainly focuses on providing infrastructure rather than creating economic synergies between urban and rural areas. As several intermediate cantons are specialised in traditional sectors where relatively limited innovation is going on, this policy gap represents a missed opportunity to foster productivity growth. For example, no mechanisms are currently in place to facilitate spillovers from high-tech employment that is mostly dominant in urban regions towards other regions in Switzerland (see Chapter 3).

72. Polycentricity could be considered a key factor in linking agglomeration policy and the NRP. The idea of polycentrism arose from the historical settlement structure in Switzerland, which consists of a network of small-sized and larger cities; at the same time, the idea is closely associated with Swiss federalism. Swiss spatial planning coined the term "decentralized concentration" in the 1960s and 1970s to designate a hierarchically structured, static approach to spatial planning (the former LIM was based on this concept). The principles of spatial planning in Switzerland from 1996 coined the term "urban network Switzerland", which – in contrast to the static concept of decentralized concentration – championed the dynamic idea of networking the cities. However, there was no concrete realization and the

urban network Switzerland concept never got off the ground. Polycentrism may designate metropolitan areas, agglomerations, urban networks or spatially homogeneous areas (e.g. the "arc jurassien"), consisting of several interlinked centres. The idea is not to create polycentric areas by decree but to support the emergence of polycentric structures with concrete measures such as (ARE 2009):

- Several model projects in the area of agglomeration policy focused on the organization of polycentric structures – it is now planned to strengthen the financing for these model projects.
- Several agglomeration programmes focused explicitly on generating urban networks. The financing announced for TransRUN in the canton of Neuchâtel is a prime example of concrete support by the Confederation for the idea of polycentrism (Box 14).
- The idea of polycentrism is also reinforced by linking the financing of infrastructure facilities to strict checks on settlement development by means of the cantonal directive plan, as provided for in the Infrastructure Fund Act. In a polycentric structure, it is the centres and not the surrounding areas that are to be promoted.

Box 14. Réseau Urbain Neuchâtelois (RUN)

Le Réseau Urbain Neuchâtelois (RUN) is an association established in 2006 which brings together actors at different levels of government to implement the development strategy for the canton of Neuchâtel. It composed of the Canton of Neuchâtel and eight groups of communes (3 agglomeration areas and five regions). It is governed by an executive committee and administered on a day to day basis by the Office of Agglomerations and Regions in Chaux-de-Fonds.

The 2004 cantonal development strategy has broad goals in five areas, each accompanied by three slightly narrower sets of goals. The five areas and the broad goals are: 1) External relations: to promote the canton and its assets internationally; 2) Economic development: to encourage development of firms and address brownfield development; 3) Accessibility: to strengthen and extend public transportation systems; 4) Urban areas: to create a strong urban network; and 5) Rural areas: to maintain and strengthen rural areas, recognising important urban-rural linkages.

The strategy is implemented through three policies: spatial planning, the NRP, and agglomeration policy. RUN brings together the latter two. It is unique in Switzerland in formally uniting these policies. With respect to the NRP, the goal is to encourage institutional reform, strengthen Neuchâtel as microtechnic pole, develop local energy potential, diversify the agricultural sector, and strengthen the canton's attractiveness as a tourism destination. The federal government has provided CHF 3.5 million in grants and CHF 14 million in loans for regional policy, which has been matched by a contribution of CHF 14 million from the canton of Neuchâtel. Agglomeration policy activities center around the cities of Locle, Chaux-de-Fonds, and Neuchâtel, the urban communes of the Littoral, and the French communes of Villers-le-Lac et de Morteau. It includes a variety of projects in areas such as culture and infrastructure. The highest profile project is the development of a public transport backbone – called TransRUN – linking the three main cities and surrounding communities. The Confederation provides 35% of investments for the agglomeration region (CHF 126 million), including CHF 96 million for TransRUN.

The cantonal development strategy is implemented via two main mechanisms: the plan directeur cantonal and contractual arrangements among the various actors of RUN. An agglomeration contract or regional development contract forms the basis for cooperation among the eight groupings of communes, in partnership with higher levels of government. These eight administrative contracts delineate project objectives and mechanisms of working among the parties (e.g. the canton and the communes) for an open-ended period of time. They set out broad lines of action, projects, guidelines for implementation, mechanisms for financing, and obligations for evaluation. Establishing the eight contracts involved a lengthy negotiation process in which the interests of multiple parties – in terms of development and sovereignty concerns – had to be addressed. Sovereignty is a key issue for communes, particularly smaller ones which do not necessarily view cantonal priorities as fully aligned with their own.

Sources: RUN (n.d.), « Organisation » « Acteurs » (webpages) at www.lerun.ch; République et canton de Neuchâtel (2004), "Conception Directrice Cantonale de L'aménagement du Territoire"; OECD questionnaire (2009); OECD questions for the Swiss local team (2010).

73. Enhancing formal co-ordination (or eventual merger) between agglomeration policy and the NRP could be considered, based on close collaboration between the federal, cantonal and municipal levels. The Tripartite Agglomerationskonferenz (TAK), founded in 2001 as a platform for co-operation between the Confederation, cantons, and municipalities, aims to facilitate development of joint agglomeration policy, facilitate information exchange, promote collaboration with agglomerations, and address specific agglomeration problems (Tobler, 2009). Issues of horizontal and vertical co-ordination for agglomerations are among the themes deemed important for economic competitiveness and tackled through the TAK, which released two reports cooperation in 2004 and 2006¹⁶. The TAK received attention in the 2002 OECD review as a useful model for vertical coordination. However, a formal tripartite arrangement for the NRP was not developed. The exclusion of wealthy (urban) cantons and metropolitan areas from the NRP meant that establishing a similar body for rural areas could create competition between the two structures: one urban and one rural. Instead, a tripartite territorial development conference which embraces urban and rural spaces could be created. At the national level, a more formalised co-ordination (or a possible merger) between the NRP and agglomeration policy could be considered.

NRP and spatial planning

74. Spatial planning in Switzerland currently reflects a fragmented spatial structure. Constitutionally, spatial planning is largely a cantonal task, with the Confederation's roles limited largely to establishing the legislative framework which provides national principles which cantons must respect, and to approving cantonal spatial plans. The Confederation's sectoral plans must also take account of cantonal spatial impacts. Cantons establish their own spatial planning and building regulations and a 10-year spatial development plan ("plan directeur") which outlines how the various sectoral activities of different levels of government with territorial impacts are to be harmonised in a particular place (canton). The "plan directeur" is approved by the Federal Council and binding on authorities. Land use planning is a cantonal task, but frequently delegated to municipalities. In large cantons such as Zurich, Aargau, Thurgau, and Geneva, supramunicipal spatial planning tasks are often delegated to regional planning associations, which produce regional plans based on the cantonal "plan directeur". Intergovernmental relations around spatial planning are addressed through the Council on Territorial Organisation, COTER (Conseil de l'organisation du territoire). This extraparliamentary commission, established in 1997, advises the Federal Council, Federal Office for Spatial Development (ARE), and the State Secretariat for Economic Affairs (SECO).

75. The extent to which cantonal spatial plans are systematically subservient to a larger cantonal economic development plan is unclear. The main issue for the NRP is that "[w]hen fulfilling the tasks conferred on it, the Confederation is also bound by the aims and principles of spatial planning. Therefore, at all levels of action - planning, legislation, administration, case-law - it remains subject to spatial planning law itself. Being tied to the "demands" of spatial planning also means that the Confederation is bound by cantonal law and the planning studies based on it unless exempted by special provisions" (Muggli, n.d.). NRP cantonal implementation programmes must be consistent with the canton's 10-year spatial development plan. "Hard" infrastructure investment through the NRP is therefore effectively subservient to cantonal spatial plans. NRP investments in "soft" infrastructure (i.e. human capital, knowledge transfer) are less affected by spatial planning.

76. More coherent spatial development could be promoted through the new spatial concept currently at work. In light of the political fragmentation of functional areas, the 2002 OECD Territorial Review of Switzerland recommended that horizontal co-ordination of cantonal spatial development planning be strengthened. In 2006, following a 2005 report by the Federal Office on Spatial Planning (ARE), Switzerland launched a reform of spatial planning across levels of government. By signing the "Convention for the common development of a territorial development project", all three levels of government committed to work together to define a national concept which would provide the basis for

future co-ordinated action by actors at different levels. It could enhance the likelihood of complementarity across cantons. The concept is scheduled to be finished by 2011 but it is not binding. While it is a significant step for intergovernmental co-ordination, it has only a political character. In instances of difficult matters, cantons will still be able to “go their own way” if necessary. A more binding solution is needed to ensure that the concept is fully implemented. For example, the experience of the Austrian Conference on Spatial Planning has underlined the importance of enforcing intersectoral and intergovernmental collaboration on spatial planning and regional policy to address future strategic challenges (Box 16).

Box 15. Projet de Territoire Suisse

Overall vision

The Projet de territoire Suisse builds on the key concept of a polycentric, solidary, and sustainable development of the Swiss territory in the long term. It is based on a structured network of urban centres, ranging from metropolitan areas and agglomerations to towns and rural centres. This network is expected to help the regions and cities to overcome the limits related to their own spatial scale and to develop functional “territoires de projet”, which contribute both to fostering urban development and maintaining rural areas. The implementation of this project requires close intersectoral and interregional collaboration among and across levels of government.

Focus on functional areas

The metropolitan areas Zurich, Basel, the Lake of Geneva Basin and the region of the capital Berne will be Switzerland's economic drivers in their quality of European leaders in terms of international connections, as locations for international decision-makers, as research centres and as cultural hubs.

At the same time, every agglomeration and every rural centre will have its own unique profile, which sets it apart from others but also fits in with them. Agglomerations will have important economic, cultural and social functions and provide central services and goods to the surrounding areas. Rural centres will also play a key role as hubs for provisioning rural areas. The economic strength of the rural centres should make it possible to ensure a high standard of living even in less densely populated and economically less powerful areas, whereas the peripheral regions will make their intact landscapes available as leisure areas with unspoiled nature.

The Alpine tourist centres will either stand alone or be linked into a connected winter sports region. Due to their specific economic structure and attraction, they will fulfil important functions as a centre in the thinly populated Alpine region.

Box 16. Spatial planning as a mechanism of co-ordination with regional policy in Austria

In the federal structure of Austria, responsibilities for regional policy and spatial planning are distributed between the federal government, the *Länder* and municipalities. Since the Austrian Constitution hardly provides for formal co-ordination procedures, the Federal Chancellery has developed informal mechanisms with the notion that co-operation does not happen by itself, at least not to a sufficient degree, and that it needs “people and bodies to manage it, to specifically address potential participants, to bring co-operation partners together, to introduce innovative ideas and to accompany co-operation projects on an advisory basis”.

Upon the initiative of the Federal Chancellery and the *Länder*, the Austrian Conference on Spatial Planning (ÖROK) was set up in 1971 as a common platform of spatial planning co-ordination involving all federal ministries, the *Länder* and the umbrella associations of municipalities and social partners. Today, the ÖROK operates as a central network interface for regional policies and the EU’s Structural Funds programmes in Austria. Both the elaboration and the follow-up process of Austria’s National Strategic Reference Framework take place within the ÖROK.

The executive body at the political level, under the chairmanship of the Federal Chancellor, includes all the federal ministers and state governors, together with the presidents of the Austrian Union of Towns and the Austrian Union of Communities and with the presidents of the social and economic partners participating as advisors. All decisions are made on a consensus basis. A Commission of Deputies as well as several thematic committees and working groups have been set up at the administrative level to accomplish ÖROK’s tasks and projects, which are in general focused on issues of joint interest of the ÖROK partners. They are formed by the Senior Officials of the territorial authorities, and the social and economic partners. One of ÖROK’s principal tasks is to publish the “Austrian Spatial Development Concept” which is revised generally every ten years.

As one result of ÖROK’s work, the “ÖROK Scenario 2030” was presented in 2009 as the result of extensive research conducted by an external team of experts under the direction of the ÖROK working group. It identified trends, challenges and strategic opportunities and developed a series of spatial development scenarios for Austria up to 2030. This work provides a tool to raise awareness of future regional challenges and present needs for action, and is intended to serve as a basis for further work by ÖROK on a new Austrian Spatial Development Concept, as well as for the sectoral and spatial development schemes of the *Länder*, cities and municipalities.

At the same time, the Federal Chancellery and the *Länder* have been experimenting with various approaches to project development, consulting and networking at the regional and local levels. In particular since Austria’s accession to the EU in 1995, “Regional Management” procedures were established in most regions eligible for EU Structural Funds. The objective is to improve co-operation on the development and implementation of regional strategies. Regional Management is organised in the framework of regional development associations with municipalities as main members, but most of financial resources come from the *Länder* and are co-financed by EU Structural Funds in some cases. Regional Management units operate on a cross-sectoral basis, and co-operate with LEADER action groups and Territorial Employment Pacts for example. A joint umbrella association, “Regional Management Austria” (RM-Austria) was established in 2001 as a network to help exchanges of experiences between the 25 Regional Management units, improve the qualifications of regional managers and further develop the cross-sectoral consulting approach.

Source: OECD (2010), *OECD Territorial Reviews: Sweden*, OECD Publishing, Paris

2.2.4. Building strategic management and evaluation capacity

77. Fully implementing the NRP requires further improvements in enhancing the strategic approach to regional policy, strengthening the evaluation and monitoring system, and more effective incentives for capacity building.

A strategic approach to mature

78. The NRP has contributed to a strategic and systemic approach to regional policy but this approach could be deepened. The capacity to align priorities between national and regional strategies is crucial for bringing the various separated policy instruments related to territorial development into a coherent package. At the moment, cantons seem to design their development strategy by listing a set of areas of interventions/themes (e.g. innovation, sustainable development) which are eligible for the NRP on the one hand and agglomeration policy on the other hand and mainstream those into the spatial planning master plan. Objectives are mainly set at the level of programmes but not in terms of economic or policy targets (e.g. GDP per capita, economic growth, employment, education, CO2 emissions). Efforts have therefore focused on avoiding conflicts among the priorities set up in the various policies (spatial planning, regional agglomeration) but have not yet resulted in the establishment of a territorial development strategy where all these elements would support together a set of common objectives. Similarly, few projects involve private stakeholders, which is not in line with the objectives and guiding principles of the policy of reinforcing regional growth and productive capacity.

79. In the short or medium run, improving inter-sectoral and inter-cantonal co-ordination is necessary since there does not seem to be much scope for integrating instruments into one unique policy framework. Efforts should target the rationalisation and increased efficiency of already existing co-ordination schemes rather than the design of additional mechanisms. The objectives of the various co-ordination platforms are not always clear, neither is the distribution of their respective roles. Capacity in setting up such a strategic approach varies considerably from one place to the other and capacity building in this area is necessary. Other benefits from reinforcing the strategic dimension of the policy also include: reducing the risk of seeing the return of a compensating approach to regional policy under the pressure of regions with less development potential; demonstrating a robust underlying logic for increasing the legitimacy of a policy whose effectiveness is regularly put into question; and facilitating the harmonisation of modalities through which the cantons implement the regional policy which at the moment are relatively diverse.

Strengthening evaluation and monitoring

80. Information gaps between levels of government are inevitable, particularly with respect to the implementation of a complex, multi-sector policy such as regional economic development. The actors, knowledge, resources, authorities, and mechanisms to promote and sustain endogenous growth can be found at all levels of government, as regional development is a shared task. In multi-level governance arrangements, the role of indicator systems and incentives will vary with the characteristics of the contractual arrangement between the different parties. In the case of Switzerland where the contract is more “relational” (parties commit for co-operation ex post), indicators system will contribute to the co-operation building by sharing common references and objectives as well as to a common learning process (OECD, 2009e).

81. Programmatic monitoring activities are largely associated with the programme agreement (contract) between the federal government and each canton. Each programme agreement sets out the objectives to be attained over the duration of the agreement (4-years). Objectives are monitored on an ongoing basis using indicators selected by the canton and incorporated into the programme agreement. A financial incentive to reach the stated objectives is provided insofar as cantons will receive the proportion of funds corresponding to the percent of the target achieved. This means that, in some cases, cantons may be required to return funds if a target is not achieved. This rule, which has not yet been tested, may thus prove highly difficult to enforce.

82. **A top-down prescription of a set of indicators is seen to encroach on cantons' autonomy to identify and implement their own strategies for achieving regional policy objectives.** The federal government does not prescribe what programmatic indicators should be monitored by the cantons. It is up to cantons to determine what to monitor and how frequently¹⁷. Even where cantons may choose to monitor the same indicators, no common definitions have been promulgated. As a result of the current approach, there is substantial heterogeneity in the approach taken by cantons. Some have indicators with targets (e.g. Valais) whereas others do not. 14 of 26 cantons use the “CHMOS” system to capture programmatic data¹⁸. CHMOS, which is co-financed by SECO and by 15 cantons, is based on the Austrian ATMOS system. In addition to acting as a programme management tool for cantons, it also serves as a federal-cantonal reporting tool for annual reports, the 2011 interim report and the 2015 evaluation (for those cantons that use the system) (responses to OECD questionnaire, 2009). It contains descriptive information, administrative data, and menus of indicators that can be selected for monitoring. Overall, data quality is perceived to vary among cantons. Aside from what is reported to the federal government, it is not clear which cantons are monitoring which indicators, or how they are using the data that they are collecting.

83. **Further efforts to improve reporting and evaluation are necessary.** Cantons must provide SECO with an annual report describing the realisation of the programme agreement. The annual report is accompanied by an interview, and the two together provide the basis for releasing funds¹⁹. In addition, the Swiss Constitution requires all policies to be evaluated with respect to effectiveness (OECD, 2009). Thus, an intermediate evaluation is scheduled for the end of the four-year programming period (the timeframe for each programme agreement) to evaluate if cantons are “on-track” and implementing programmes in the spirit of the NRP. Tools under consideration include a SWOT analysis and a questionnaire that will be sent to the cantons (in addition to their annual report). A final evaluation is also to take place following of the completion of the eight-year national programme cycle. How the results of this evaluation would be used needs to be clarified.

84. **The use of the “management cockpit” should enhance annual programme monitoring and periodic evaluations.** Traditionally a management cockpit refers to the organised presentation of key indicators which enables managers to assess progress toward the achievement of goals and objectives. Within SECO it is used as an (internal) steering tool for the regional policy section of SECO and brings together the various coaching, monitoring, reporting, controlling and evaluation activities in a focused manner. It is mainly based on qualitative assessments collected from the NRP stakeholders by the SECO team, and where available on quantitative indicators. The management cockpit acts as a platform of structured discussion (a) to analyse the NRP implementation and the level of attainment of the NRP objectives, (b) to initiate reflection and learning processes for the SECO team thus ensuring better coaching and monitoring of the NRP; and (c) to promote coherence of the actions of the various stakeholders involved in the NRP. The cockpit should thus be an early warning system in case of deviation from the intended outcomes.

85. **Evaluation and monitoring seem to be mainly implemented at the level of projects/programmes but less systematically at the level of the policy as a whole.** Concerns about the macroeconomic impact of the policy exist at the level of the confederation but seem rather weak, if not ignored, at lower levels. The goal is to narrow the information gap faced by the Confederation regarding the economies of the regions targeted by the NRP. The core of this monitoring activity is ten economic development indicators presented by supracantonal region, canton, and MS region²⁰. The ten indicators were chosen based on the fact that they represent final impacts (vs. outcome and output) and that they are available at the municipal level²¹. The 2010 annual conference for Pillar 3 will focus on using this data in order to help cantons to develop a second four-year programme better tailored to the needs of regions. Building capacity in this regard is critical if cantons and their regions are to identify functional economic areas, understand linkages, and design interventions that may extend across cantonal boundaries.

86. **Switzerland could build on the experience of the EU in terms of evaluation partnerships.** Evaluation of the macroeconomic impact of Cohesion Policy is undertaken on a partnership basis, with Member States responsible for *ex ante* evaluation and the European Commission for *ex post* evaluation. The European Commission pushes for the adoption of practices where monitoring and evaluation aspects are included from the very beginning of the programming process. This is critical for strengthening focus on the results of the policy and the use of evidence-based policy making, which can significantly contribute to improve the impact of Cohesion Policy. This requires a strong monitoring and evaluation culture and a commitment to learning within partnerships.

More effective incentives for capacity building

87. **Improved skills and knowledge are required to effectively implement the principles of the NRP at the sub-national level.** Direct technical assistance from the Confederation, which may occur in response to annual reports or through technical contacts, is limited. Instead, the main activities in this area under Pillar 3 of the NRP have been contracted to Regiosuisse, a network of three private companies, launched in 2008. Regiosuisse provides education and training activities for individuals working in the field of regional policy, collects and distributes information to practitioners and the public, and brings together key actors of regional policy. It offers an internet portal, a telephone hotline, training opportunities, communities of practice, media information, and a research network to enhance linkages between research and practice. There is no obligation of cantons to participate, although most do. The implementation of NRP programmes is uneven across cantons. Within the last set of programme agreements concluded in November 2008, some have spent a majority of funds while others have only recently begun the implementation stage. Some cantons encountered difficulties crafting and implementing their NRP programme. Some experienced delays in the implementation of transitional legislation, delays in the adoption of cantonal lines of credit, questions regarding cost-benefit analysis, an obligation to reform generally obsolete regional structures while simultaneously launching innovative projects, and a lack of capacity with respect to operational decisions regarding the use of NRP tools.

88. **Capacities to implement the NRP should be developed at all levels of government in order to ensure that regional economic development is seen as a true partnership rather than as a joint task in a technical sense.** First, the federal criteria for evaluating implementation programmes should be made public and clear prior to submission by cantons. Second, the programme agreements established between levels of government should be seen both as a way to specify the responsibilities of parties to ensure sub-national programmes are consistent with the NRP logic, as well as a learning tool for the diffusing of best practices. Third, the monitoring system should be designed not only to determine whether programme implementation is consistent with NRP principles, but also where capacity may fall short to do so – for example by incorporating “capacity indicators” into the core set of indicators suggested as part of an upgraded monitoring system. Finally, education and training activities of Regiosuisse could be further developed based on an assessment of stakeholders’ needs. The use of international and inter-cantonal experiences should be promoted through case studies, twinning, field visits, and continuous attendance at international venues such as INTERACT and ESPON in which SECO and ARE participate.

Conclusion

89. **Policy coherence could be strengthened by enhancing formal co-ordination between the NRP and agglomeration policy, as well as between the NRP and agricultural policy (with the goal of positioning the latter in a broader context of rural policy).** Federal encouragement of cantonal economic development strategies which provide a multi-year framework for an integrated economic development of urban and rural areas beyond spatial planning could be valuable. Spatial planning would then serve economic development goals rather than the reverse. The impact of tax concessions should be

evaluated to determine if they truly attract businesses to a specific location or if they reward companies which would have located there anyway.

90. Identifying and intervening in supracantonal functional areas should be facilitated by strengthening incentives for intercantonal co-ordination. At present, a single canton assumes responsibility for intercantonal initiatives and the provision of funds has proved to be an insufficient incentive. Stronger incentives may come through the provision of additional funds, accompanied by technical assistance from the Confederation for identifying functional areas and design of cross-border interventions. A mechanism for allocating funding to a joint entity, possibly along the lines of agglomeration programmes, could be considered. The Confederation is also well-positioned as a “network node” to capture and distribute the potential learning that comes from cantonal “policy laboratories” with respect to the successes and challenges encountered with respect to coordination of actors in functional areas. Showcasing successful collaboration for regional economic development could help demonstrate that regional solutions are a productive approach and an alternative to ceding competences to the federal level. The Confederation could also consider financing the evaluation of strategies undertaken to grow the regional economy in cross-cantonal functional areas. This type of information could be made available via Regiosuisse, as well as to cantonal directors’ conferences.

91. While attaching explicit sanctions to the monitoring system should be avoided at this stage, incentives could instead be associated with the value of the information produced and showcasing good practices (reputation effects). Accompanying indicator systems with rewards or sanction in the context of regional policy is certainly not without precedent, but evidence is mixed regarding effectiveness (OECD, 2009). Given the difficulties that the Confederation already faces in gathering information from cantons for monitoring purposes, introducing sanctions may exacerbate cantons’ reluctance to provide data and encourage gaming. Instead, attention could be given to refining the indicator system to better enable the Confederation to provide strategic assistance to cantons and regions. The limited knowledge regarding the “right indicators” to monitor and the need for flexibility have been rightly acknowledged by the federal government. Information produced through the first round of monitoring (2008-2011) should therefore be used to refine the monitoring system and establish a core set of indicators with clear definitions linked to annual reports. Through Regiosuisse, the federal government has the opportunity to identify and recognise good practices, which may play to cantons’ competitive spirit.

NOTES

1. The description of the three geographic targets of NRP comes from the Regiosuisse website, accessed February
2. The participation of the cantons in the development of the national strategy is provided for by NRP's authorising legislation (Section 3, Article 14, para 3) (Federal law on regional policy, 2006). Collaboration took place via a working group composed of SECO and cantonal ministers of finance, with the technical and scientific support provided by an external partner.
3. Soleure and Zoug opted not to participate and Geneva participates in the INTERREG programme.
4. More detailed examples of institutional mechanisms can be found in OECD (2006), *Competitive Cities in the Global Economy*, OECD Publishing, Paris, and OECD (2009), *Regions Matter*, OECD Publishing, Paris.
5. Through its parent foundation, it brings together the cantons of Aargau, Glarus, Grisons, Schaffhausen, Schwyz, Solothurn, Zug and Zürich, as well as the cities of Winterthur and Zürich, and multiple private companies ranging from large banks to law practices.
6. CDEP-SO is also SECO's partner for the intercantonal Knowledge and Technology Transfer (KTT) projects for SMEs (Alliance and Platinn), in collaboration with CTI, the federal innovation promotion agency. It has a subgroup that addresses regional policy.
7. Measured via a dummy variable indicating the presence of a common border between the pair of cantons and via a measure of geographic distance between cantonal capitals.
8. Bochsler also finds that in the areas of health and social security, geographic distance (between capitals) proves important – but having a common border is not relevant. Here what matters is citizens' access to services close to home. Common language is relevant in policy fields where language plays an important role (education, science, culture) but less so for other policy fields. Strong ties appear to exist in French speaking cantons, followed by German speaking ones. Other factors, such as the size of cantons and political differences between cantons provide little independent explanation for intercantonal cooperation in the presence of the factors noted above. Finally, there is evidence of diminishing marginal utility of intercantonal agreements: cantons with numerous agreements are less active in seeking additional ones, while those with far fewer and which tend to be isolated (e.g. Ticino) are more active in seeking to establish network linkages.
9. It is worth noting that intercantonal concordats are generally established by the executive arm of cantonal government. Cantonal parliaments have to approve them, but they are unable to influence concordats they same way they do cantonal legislation. Some concordats may even need to be approved by popular referenda. If the executive bodies move too quickly or the intercantonal agreement is too extensive, garnering parliamentary or popular approval may be difficult. This is less problematic for lower level issues or projects which are not particularly expensive and more of an obstacle for concordats that have a legal impact (define rules) that overrule cantonal law, or when projects are particularly expensive.
10. While cross-border cooperation at the cantonal level may be considered horizontal in nature, the foreign policy dimension generates an important vertical relationship as well. Specifically, according to the constitution, official contacts between cantons and foreign governments must be arranged by the Swiss Federal Council. The Council negotiates, signs, and ratifies agreements at the request of and on behalf of the canton(s) concerned. The canton is thus a party to the agreement, to which it must consent. These

agreements are subordinate to those of the Confederation and may only address those competences for which cantons are responsible.

11. The joint consultative commission for regional problems between the Canton of Geneva and the French departments of Ain and Haute-Savoie
12. The German-French-Swiss government commission for the promotion of cross-border cooperation in the Upper Rhine region.
13. Funding for regional development policy is not only comparatively small at the national level, but at the cantonal level as well. For the canton of Berne, for example, regional policy represents less than one percent of the cantonal budget.
14. This is also in line with the categories of objectives indicated in the programme agreements for the 2008-2011 period (Regiosuisse, n.d. a):
 - Tourism (27.3%): activities concentrate on products and tourism services, as well as the creation and extension of cooperative activities.
 - Industry and business (24.6%): activities emphasise knowledge transfer and management, as well as the creation and extension of cooperative activities.
 - Regional management/cooperation (19.8%): activities aim to strengthen intergovernmental and cross-border cooperation
 - Economic promotion activities (13.6%)
 - Agriculture (7.7%)
 - Natural resources (6.8%)
 - Education and health (1.7%)
15. There is some administrative coordination between agglomeration policy and NRP to the extent that two members of the Swiss Federal Office for Spatial Development (ARE) include two SECO staff. (Tobler, 2009)
16. See Conférence tripartite sur les agglomérations (TAK) « Renforcement de la collaboration dans les agglomérations transcantonales », Rapport du Groupe de travail technique tripartite du 29 mai 2006 and « Collaboration horizontale et verticale dans les agglomérations » Recommandations de la Conférence tripartite sur les agglomérations du 24 juin 2004, Rapport du Groupe de travail technique tripartite du 1er mars 2004 available at http://www.tak-cta.ch/index.php?option=com_docman&task=cat_view&gid=62&Itemid=82
17. The rationale for the current approach by the central government is that a heavily prescriptive monitoring system may interfere with cantons' generation of their own ideas, effectively inhibiting innovation in an environment where there is perceived to be little ex-ante knowledge of how to implement NRP. Previously, the indicator system was very comprehensive and produced a great deal of information, but it was not used for guiding policy or strategic decision making.
18. The largest and the smallest cantons do not use CHMOS for different reasons. The largest seem to have sufficient capacity to manage their projects themselves without using CHMOS as a resource; the smallest do not appear to value paying for the tool given their small budget and small number of projects.
19. While the Confederation released 2008/2009 funds in line with programme agreements, following the 2008 annual reports some cantons reduced their 2009 funding request.

20. The MS regions do not correspond to the regions that regional managers deal with, but it is not that far off.
21. The ten indicators are: place of work/jobs; new jobs, new companies; GDP per capita; productivity for different sectors and branches; share of unemployment; population (growth and migration); taxes paid to the national government per capita (gives an indication of the wealth in regions; it is comparable across regions); stock and new residential development; nights spent in hotels; occupation rate of hotels.

CHAPTER 3: REGIONAL INNOVATION POLICIES IN SWITZERLAND

Key messages Chapter 3:

- **Switzerland is a leading country in science, technology and innovation, however there is a worrying tendency of stagnation in R&D and innovation activities.** Untapped potential exists in traditional sectors, in intermediate and rural regions: small firms with lower absorptive capacities could further develop into innovative ventures and contribute both to sustained national growth and to balanced territorial development. Federal innovation policy, and in particular the instruments deployed by CTI, address very well the needs of the science- and technology-based innovators. Companies with lower absorptive capacities, innovating without R&D, or involved in other forms of innovation (e.g. organizational innovation) are not a target of CTI. To serve their needs, proximity matters: they should become the target of regional innovation policies and supported under the NRP.
- **There are no explicit regional innovation policies in Switzerland.** A large number of uncoordinated and very diverse innovation promotion initiatives are developed and implemented by the cantons, as part of their economic development mission. The NRP helps to reveal and provides a boost to those initiatives. The type of innovation support developed at cantonal level is complementary to federal instruments as it involves advice and support for start-ups, small companies, networks, technology transfer activities on a sub-national scale, based on proximity relationships. There is a lack of visibility and of quality assessment of those dispersed initiatives. There are also occurrences where unnecessary competition and lack of coordination take place between federal and cantonal initiatives, e.g. in start-up support where services are created by cantons in parallel with CTI initiatives.
- **The inter-cantonal level emerges at the most relevant for innovation promotion on a sub-national scale, and the cross-border dimension should be further developed.** Only few initiatives are implemented at the inter-cantonal level, but they demonstrate the possibility to overcome barriers for inter-cantonal cooperation in innovation. The NRP should use its leverage potential on inter-cantonal cooperation, by increasing the share of funding dedicated to joint programmes and projects. The cross-border dimension of innovation could also be exploited further given the specific location of the country and the potential for synergies with neighbouring regions.
- **A clearer division of roles between federal and sub-national authorities in innovation promotion should be reached.** Federal authorities should continue to use their instruments to support high-technology and science-based innovation, while sub-national authorities (cantons acting in partnerships) should support knowledge absorption capacities in more traditional companies and sectors. In this configuration, the KTT should acquire a national dimension, and be defined on a thematic rather than regional basis. The demand-led instruments at sub-national level should be expanded, evaluated, professionalized and managed at inter-cantonal level. Their implementation should rely on well-coordinated actors and initiatives by regions and cantons, as part of inter-cantonal partnerships.
- **The NRP eligible areas should also cover agglomerations,** since these play a key role in innovation. This would facilitate the establishment of integrated regional innovation policy initiatives, enhancing knowledge spillovers across the various territories.
- **Strategic management capacity of regional innovation should be strengthened.** This involves: ensuring transparency and performance-based NRP funding for innovation; implementing better evaluation mechanisms and enhancing incorporation of business perspective.

92. **The Swiss New Regional Policy (NRP) has placed an important accent on promoting innovation as a driver of regional development**, as indicated in the previous chapter. Given the position of Switzerland in the global economy, it is clear that Swiss companies cannot hope to compete on the basis of costs, and have to develop high value-added products and services, competitive in an international context. The new policy has changed the focus from a redistributive towards an endogenous growth approach: this places a premium on developing innovation capacities in the regions. The NRP “has the goal to stimulate *innovation*, to generate value added and improve competitiveness in certain territories (mountain regions, rural areas and border regions) with the aim to contribute to job retention and creation in the supported zones (approach targeted on growth)”¹. At the heart of the NRP, Pillar 1, entitled “Stimulate innovation, generate value added and competitiveness in regions”, provides direct support to projects and initiatives geared towards the promotion of innovation and entrepreneurship in the regions. Hence, with the NRP, cantons get new incentives, along with funding, for supporting structural change and finding new sources of growth in their territories. This new orientation responds to a key recommendation from the OECD 2002 Territorial Review of Switzerland: develop new growth poles in the regions based on a “learning regions” strategy.

93. **Until the launch of the NRP, the federal level was the only governmental level explicitly active in innovation policy.** With the NRP, which presents a radical departure from the previous regional policy geared towards physical infrastructures, regions and cantons are given new impulses in this domain. Hence the core question of this chapter is: what should be the role for sub-national level in innovation policy? And how should regional innovation policy be implemented to ensure good synergies with federal policy? To answer this question, the chapter unfolds as follows:

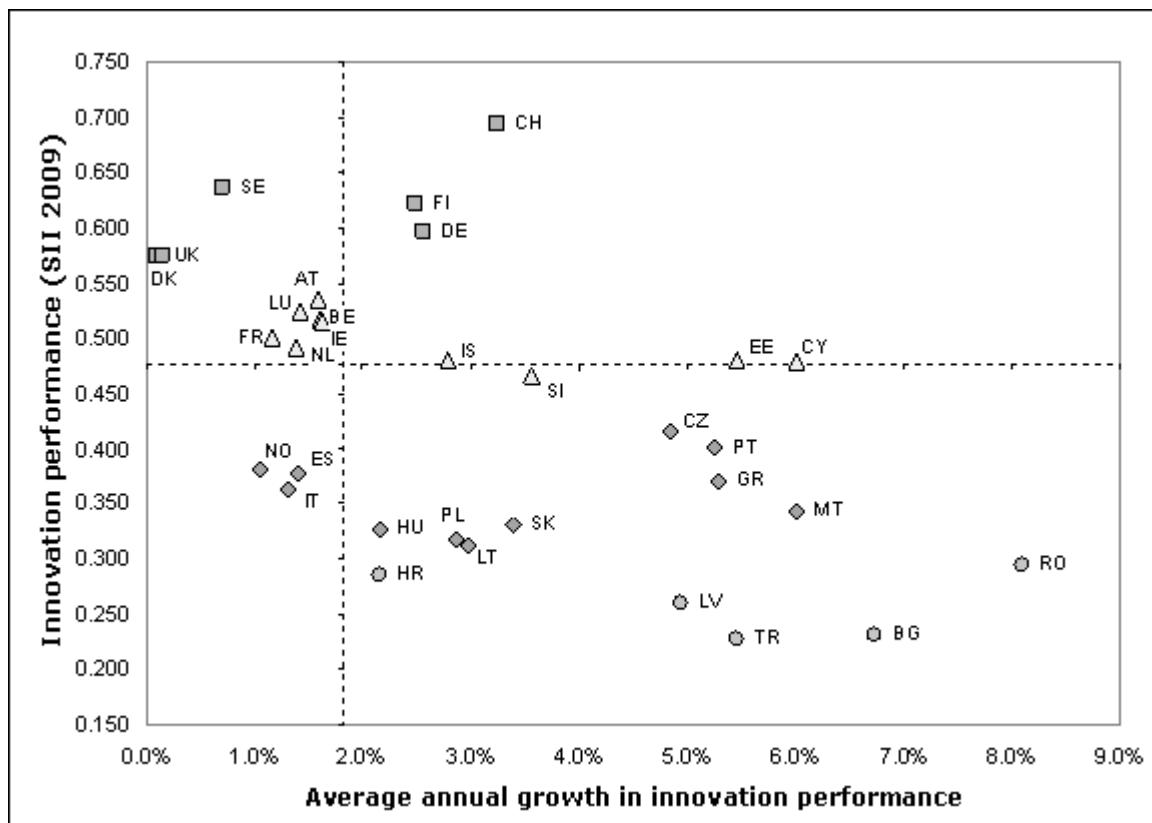
- First, section 3.1 presents a critical analysis of the current state of federal and regional innovation policies in Switzerland. It starts with a brief overview of the situation of the country with respect to innovation performance and makes the case for enhancing innovation promotion at regional level. It then discusses key orientations and main instruments of innovation policy at federal level. In particular, new federal instruments aiming at knowledge transfer, and with special relevance to the regions, are discussed in more detail. This analysis deals with the question of the functioning of Pillar 2 of the NRP: how does the NRP create synergies with policies in other areas (in this case innovation)? Next, that section analyses the current situation with respect to innovation strategies and initiatives developed at the sub-national level in Switzerland. This covers initiatives and strategies developed by regions and cantons independently of the NRP, as well as plans that have been developed within the NRP framework. The governance arrangements for innovation policy are discussed, in line with the more generic comments that have been made for the NRP as a whole in the previous chapter. The case of Eastern Switzerland is given specific attention in this section, in order to illustrate the discussion with the example of a border region facing specific challenges with respect to innovation promotion.
- Second, section 3.2 concludes on the challenges and perspectives for developing innovation policies in, and for the regions in Switzerland. Four challenges emerge from the analysis: i) the need to clarify the respective roles of federal and regional actors in innovation promotion; ii) the importance of building strategic management capacity; iii) the necessity to strengthen the inter-cantonal and cross-border dimension in innovation promotion; and iv) the relevance of a Swiss-wide eligibility for NRP regions.

3.1 Swiss federal innovation policy

3.1.1. The Swiss Innovation system: great performance, but emerging policy challenges

94. Switzerland is performing well on innovation criteria. In addition to being one of the richest and most developed countries in the world, Switzerland is also an innovation leader, especially on the high-tech side. Many large Swiss companies are world leaders in pharmaceuticals, biotechnology, medical technology, machinery and equipment, and other high-technology goods. The country also hosts new-technology-based firms active in niche specialties, and the federal institutes of technology and several universities generate high-technology spin-offs. Figure 38 indicates that, according to calculation of the European Innovation Scoreboard, Switzerland is the leading country in the top group of European innovative countries. The growth rate of its innovation performance is less impressive, but still above that of the other leading countries.

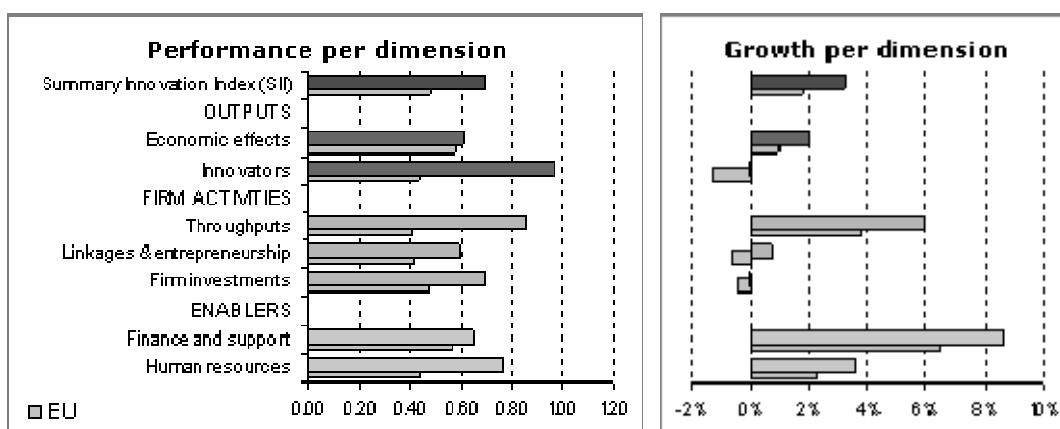
Figure 38. Innovation performance of Switzerland in European comparison



Source: European Innovation Scoreboard 2009. Squares are the Innovation leaders, triangles are the Innovation followers, losanges are the Moderate innovators, and circles are the Catching-up countries. Average annual growth rates are calculated over a five-year period. The dotted lines show EU27 performance and growth.

95. **The framework conditions for innovation are excellent in Switzerland.** Figure 39 details the components of the European Innovation Scoreboard summary innovation index: the innovation performance sub-indicators exceed EU average on all dimensions, both in static and dynamic terms. In addition, other determinants of innovation performance, which are not measured by these indicators, are also favorable in Switzerland (OECD 2006). Framework conditions are of excellent quality: the good macroeconomic situation, the political and regulatory stability, the relative strength of the financial system, a favourable tax system, a well-educated and multilingual population, a flexible labour market, and high standards of living, all contribute to the attractiveness of the country both from individual and from company's perspectives. Innovation enquiries (Arvanitis et al. 2010) reveal that, in general, innovation obstacles tend to lose importance over time, suggesting that the quality of the environment for innovation is improving. State regulations do not emerge as a problem in those enquiries; and the share of companies wishing more R&D subsidies is almost negligible. Furthermore, a Swiss characteristic is that both large firms and SMEs are innovative, the latter being much more innovative in European comparison. The co-location in Switzerland of top level public research institutions, with a high degree of international excellence, and of global R&D active multinationals, is a strong attractiveness factor for innovative activities. These indicators confirm the very good performance of Swiss regions on indicators such as patent applications, as illustrated in Chapter 1.

Figure 39. Innovation performance of Switzerland per dimension



Source: European Innovation Scoreboard 2009.

96. **However, the Swiss innovation system presents also some weaker aspects, related to barriers to entrepreneurship, limited diffusion of innovation across regions and sectors, and a tendency of stagnation in R&D and innovation dynamics.** Barriers to entrepreneurship are reported, such as deficiencies in venture capital availability, or a punitive bankruptcy law. In the General Entrepreneurship Monitor, Switzerland holds only an average position (these aspects are discussed in the OECD Review of Innovation Policy in Switzerland (OECD 2006)). Business investments in R&D are remarkably high, but the spread of innovation across the whole economy (sectors, regions) is limited: there are still many companies active in traditional sectors, which need to develop into more innovative ventures. The points of vulnerability of the Swiss innovation system can be identified through the examination of innovation processes and performances in firms. The Swiss Institute for Business Cycle Research conducts regular innovation enquiries on a panel of Swiss firms. Innovation in these enquiries is defined as the implementation of new or significantly improved good (product or service), or process, or marketing method, or a new organizational method in business practices, workplace organization or external

relations. The results of the latest enquiry conducted in 2008 confirms the good innovation performance of Swiss firms but points also to some dangers when the results are looked at in a dynamic perspective over the last 15 years (Arvanitis et al. 2010). According to the enquiries, innovation activity of Swiss firms tends to stabilize over time: the share of enterprises involved in product or process innovation is progressively reducing and these enterprises invest less in innovation. This decline is even stronger for firms active in R&D and patenting. Within R&D active firms, the trend is towards investing in more applied research. An empirical analysis confirms the positive relationship between innovation indicators (inputs and outputs) and labour productivity: hence a stabilization of innovation activity will result in stagnating productivity. The enquiry identifies a few sectors which are only moderately or not innovating such as: food, watch making, wood, metalworking, banking and insurance, trade, transport, hotel. One positive trend aspect is the fact that the share of sales linked to new products is evolving positively despite a decrease in expenditures for innovation, indicating that enterprises become more efficient in translating innovation inputs into outputs. Two typical barriers for innovation - funding and availability of qualified personnel - have lost their importance over the long term but tend to regain strength recently.

97. **Many Swiss firms also innovate without conducting R&D.** Innovation enquiries measure innovation outputs in the form of, e.g. share of sales due to new or improved products or processes. Like in other countries, data collected in Switzerland show a discrepancy between firms investing in R&D and innovation-active firms: many firms are responsible for product and process innovations without investing in R&D. In the 2008 survey, 62% of Swiss industrial firms were innovative, but only 43% were involved in R&D (Arvanitis et al. 2010). This underscores the importance of "innovation without R&D", and the fact that innovation is a multi-faceted phenomenon, involving many other investments and capacities at the firm level than R&D. We return to this point when discussing the respective role of federal and regional policies in the area of innovation.

98. **Extending innovation activities in more Swiss firms, sectors and regions, is a relevant policy opportunity.** The conclusion of this short overview of the performance of the Swiss innovation system is that, despite the current excellent innovation performance of the country in a European comparative context, there is a need to further reinforce this performance, for two reasons. First, competition from outside of Europe is affecting all European countries, including the leading ones: even if Switzerland outperforms European countries on all innovation-related indicators, it shares with them some typical weaknesses such as bottlenecks for new enterprise creation or a stagnating innovation activity. Second, enhancing the spread and growth rate of innovation activities across the whole economy would help to tackle the problem of Swiss sluggish productivity growth. Here the regional dimension comes into play, since the less innovative sectors tend to be over-represented in rural and intermediary regions. Increasing the number of companies involved in innovation over a wide range of sectors is one option to address the problem of stabilization of innovation activities in Switzerland.

3.1.2. Swiss Innovation policy: shifting towards a more demand-led innovation policy

99. **The Swiss Confederation has adopted a robust and effective science and technology policy, based on a market failures rationale.** This policy is notably expressed in the four-year "Message with respect to the encouragement of education, research and innovation 2008-2011" by the Swiss Confederation. This policy targets actors falling under federal competence: Federal Polytechnic Schools, professional training institutes, universities of applied science (a shared competence with the cantons), support to research and innovation and international cooperation. The key components of this policy are summarized in Box 17. In addition, other Ministries, such as the Department of Energy, also fund innovative projects under their own competences.

Box 17. Key components of Swiss Research and Innovation Policy

1. Key orientations of policy

- Investing in **fundamental research** to consolidate the position of Switzerland as a top laboratory of ideas at international level. Key actors are Polytechnic federal schools, acting as models of excellence for the entire research system. Cantonal universities and cantonal Universities of Applied Science also perform fundamental and applied research and educate students at the master level.
- Funding special measures for **training** of young researchers.
- Encouraging **transfer of knowledge** from all types of Higher Education Institutions to enterprises.
- Supporting promising, practice-oriented **research projects**.
- Reinforcing **education and professional training** at Polytechnic Federal Schools, universities and Universities of Applied Science, to create a sound technical and professional basis for the national economy.
- Creating the best **framework conditions** for STI actors and associating them with strategic EU programmes.

2. Main governance mechanisms

- **Key policy document:** Four-year strategic plan for education, research and innovation (currently 2008-2011).
- **Key decision-making and advisory bodies:** Ministry of Internal Affairs is responsible for Higher Education and basic research; Ministry of Economy is responsible for Universities of Applied Science and support to applied research. The Swiss Science and Technology Council (SSTC) is the advisory body for the federal government. The Confederation and the cantons jointly manage the university system.
- **Key implementing bodies:** SNF (Swiss National Foundation) provides funding for basic research at High Level Education organisations and manages national research programmes; CTI (Swiss Innovation Promotion Agency) supports applied research and technology and knowledge transfer. CTI's budget is 20% of that of SNF.

3. Science base, universities, public research

- **Public research system:** the university system has been progressively reformed since the '80s, with the aim to increase universities' autonomy, introduce deregulation of hiring and salary policies, and establish strategic planning practices. This evolution is most visible with Polytechnic federal schools, and diversity holds across cantonal universities. Refocusing on main strengths is a currently ongoing process supported by federal funding of cross-university cooperative projects. Re-allocation of disciplines across the two Polytechnic federal schools has taken place. Quality assessment procedures are being scaled up. The research system shows a dual profile with the successful creation of Universities of Applied Science in 1997: these are geared towards professional education and have a mandate to focus on the needs of industry, while Polytechnic federal schools concentrate on top-level fundamental research. The university system as a whole is widely open to foreign students.
- **Structural funding:** Polytechnic federal schools of high standard, cantonal universities and new Universities of Applied Science (UAS, oriented towards professional education) are funded through block grants by the Confederation. This funding is ruled by 4-year performance agreements. The cantons fund their own universities (ten cantons have their own universities), and these also receive supplementary funding by the state (based on student numbers). There is a limited role of public research organizations in the country.

- **Competitive funding:** Shift of the balance between core and competitive funding to the benefit of the latter type. SNF provides funding for: individual R&D projects in academia; networks of excellence and Centres of Competence linking departments of various types of universities together; national research programmes conducted in collaboration between several university laboratories; grants for researchers at universities, covering various careers stages.

4. Knowledge and Technology transfer and public-private research partnerships

- **Universities of Applied Science:** main instrument for fostering public-private partnerships as they have the mission to cooperate with companies. **CTI funding:** supports joint applied projects between universities and private companies, with funding allocated to the public actors only (this is the main instrument of CTI). **CTI KTT:** knowledge and technology transfer networks (KTT) geared towards SMEs, with the aim to facilitate their access to knowledge sources in universities.
- **University technology transfer offices.**
- **No public-private competence poles or clusters-types** of instruments in the Swiss innovation policy portfolio, with the exception of the CTI Biotech and CTI Medtech, which are information platforms and hubs for interested companies and research institutions in these sectors.

5. Private R&D and innovation

- **Absence of direct support for companies' R&D and innovation.** The only exceptions are the recently introduced innovation cheques, allocated to companies but redeemed in knowledge institutions, and the Innotour programme, which funds innovative projects in the tourism sector.

6. Entrepreneurship and start-ups

- **CTI start-ups:** advisory and coaching services for entrepreneurs, and the granting of a CTI label to best performing start-ups (used to facilitate access to finance).
- **CTI Venturelab:** entrepreneurship training programme, in cooperation with several **universities and polytechnic federal schools.**
- **Venture capital schemes:** no public intervention

Source : European Innovation Trendchart (2009) Country report Switzerland

100. Switzerland does not have a broad-based innovation policy extending beyond technology transfer promotion. Even if official documents refer to “Research and Innovation” policy, the key policy components mentioned in Box 17 indicate that the Swiss Confederation carries out a science, research and technology transfer policy but does not deploy an innovation policy in the broader sense. Overall, Swiss innovation policy is characterized by a non-interventionist stance: instruments target mainly research in the public sector and care for framework conditions. Funding programmes for public R&D refrain from selecting specific fields for research and leaves this decision to researchers themselves. This is true both for the Swiss National Foundation (SNF) for fundamental research and Swiss Innovation Promotion Agency (CTI) for applied research, with the exception of SNF National Research programmes on themes of socio-economic importance. Technology transfer is part of the policy portfolio and managed by CTI, including knowledge transfer with the KTTs, but does not include public-private structural initiatives such as “competitiveness poles” or similar endeavours. There are very few initiatives targeting innovation in businesses directly, no direct support for non-technological innovation in companies, and no direct support for business R&D (a quite unique situation in Europe). The direct promotion of innovation-oriented inter-firm networks or cooperation is not part of the Swiss federal policy portfolio either. The only part of the portfolio that addresses companies directly consists in initiatives by CTI to support entrepreneurship by

soft activities (not involving direct funding). This liberal approach is supported by executives of the large multinationals, responsible for the majority of private R&D in Switzerland, who militates against intervention of the State towards private actors (Economiesuisse 2008).

101. **In addition, the Swiss innovation policy, targeting excellence in research, is largely a-spatial, which makes sense in the Swiss context.** CTI supports research- and technology-driven innovation in a bottom-up perspective, letting research institutions and firms determine the direction of projects to be supported. The support takes the form of project funding and consortium funding. CTI manages the information and exchange platforms Medtech and Biotech, to promote R&D and partnerships in those two key domains of the Swiss economy, but there are no preferential treatments either on a sector or regional basis. Only excellent projects with high promising impacts are retained for funding by CTI. There are convincing arguments for this in Switzerland: the quest for research excellence and effective technology transfer needs to rely on best performing laboratories, firms and individuals, and should not be influenced by regional considerations. CTI promotion is ensured at the national level, and the regional spread of CTI interventions reflects the capacity of actors throughout the country. In countries where other aspects than science and technology-driven innovation are the focus of policy, the importance of proximity for enhancing firms' absorptive capacities (involving other elements than R&D) generates policies that have a spatial dimension. Hence, it is relevant for the Swiss federal policy, as currently defined, to remain a-spatial.

102. **There are various ways in which Swiss innovation policy could become more demand-driven.** The 2006 OECD Review of Innovation policy in Switzerland (OECD 2006b), taking on board conclusions from OECD work on the economic situation of the country (OECD 2006a) acknowledged the success of the current policy for promoting excellent research capacities in Switzerland. It provided several recommendations for further improvement along the existing orientations (recommendations 1 to 3 below) but it also introduced the need for new considerations pertaining to innovation from a demand-led perspective, complementing the existing technology-driven approach (recommendation 4) :

1. Further improving framework conditions, by fostering competition, removing regulatory and financial barriers to entrepreneurship, pursuing the reform of the higher education system.
2. Improving the governance of the innovation system: securing planned increases in R&D funding in budgets, reinforcing the role of Swiss Science and Technology Council and the use of strategic intelligence tools (including inputs from SNF and CTI), facilitating inter-sectoral mobility between academia, industry and public sectors.
3. Improving university-based research through notably more attention to career paths, better evaluation procedures, etc. The role of UAS and their connection with the business sector is an important point of attention in the recommendations.
4. Extending the scope of innovation policy through: increase in CTI funding, shift towards demand-led interventions, envisaging direct funding for innovation schemes, promoting public-private partnerships for innovation, extending support to innovation in services. The latter recommendation, if followed, would represent a marked shift from the traditionally non-interventionist, technology-driven, and public-sector oriented, Swiss STI policy. But it may also pave the way towards a complementary role for regions in innovation policy.

103. **Recent evolutions of the Swiss STI policy show an increasing attention to technology transfer and innovation support, involving some limited spatial considerations.** Following the 2002 OECD Territorial Review of Switzerland, which recommended an increased focus on technology transfer and greater orientation on society's needs for Higher Education Institutions (HEIs) and Public Research

Organisations (PROs), several initiatives have been put in place. The key actor here is CTI, the Swiss Innovation Promotion Agency, and relevant instruments are: the KTT (Knowledge and Technology Transfer) Networks, CTI innovation cheques, CTI entrepreneurship and start-ups promotion. The CTI instruments share two characteristics: their mode of delivery incorporates a regional dimension and they have the private sector as a target group. They are thus important for the discussion of the regional dimension of innovation policy in Switzerland. In addition the Universities of Applied Science play a role of applied research and technology in support for SMEs needs, with a regional dimension. These instruments are discussed below.

3.1.3. Technology transfer with a territorial dimension: the KTT consortia

104. **Since 2005, Knowledge and Technology Transfer Networks (KTTs) have been put in place to promote research collaboration between enterprises and universities.** CTI got a new role with the KTT instrument launched in 2005: promoting knowledge and technology transfer between universities and companies throughout Switzerland, including a territorial dimension. This role is designed as an extension of CTI's core business: supporting individual joint R&D and technology transfer projects between public research organisations and companies. The KTT is an initiative originating from the Swiss Parliament.

105. **The KTT Consortia are networks of Higher Education and Research Institutions**, managed by CTI, as an extension of its core business: supporting individual joint R&D and technology transfer projects between public research organisations and companies. They have been established after the failure of two previous initiatives: one was a network of technology transfer institutions at universities (the Swiss Network for Innovation SNI), and the other an Internet-based resource gathering supply and demands for technology in the private and public sector in the country. Both initiatives failed due to the lack of interest from the knowledge institutions. For the formation of the KTT consortia, CTI called public research organisations and asked them to form coalitions. Companies were not part of this process. The drivers of the networks were the universities with the weakest links with regional SMEs, whereas the Universities of Applied Science were less interested as most of them already had established connections with companies. The main rationale for the universities was to gain more visibility and get business partners for their technology transfer activities. Four generic KTT were established, each covering broad regional areas in Switzerland, and one thematic KTT on eco- technology and energy, covering the whole country. During the selection process some proposed networks have been merged, such as Alliance (Western Switzerland) and Ticinotransfer (Italian Switzerland). Advisors in each KTT have a broker mission between the universities part of their consortium and Swiss companies: they refer companies to university partners for joint R&D or technology transfer activities and facilitate communication between SMEs and university researchers.

106. **NRP aims at complementing the technology and science- driven mission of the KTT with a demand-led function.** The CTI is financing KTT for companies having high technology absorption potential, and the NRP finances activities for firms having a low technology absorption potential for innovation. It should be noted that the NRP does not finance directly KTTs. Some KTTs take advantage of the NRP, but this happens through the cantons. Based on cantonal programmes including KTT in their strategies, the NRP provides funds to the cantons that are allocated to some KTT, the idea being that a "demand-led" function is added to the "technology driven" mission around which the KTT were constructed. With this added "demand-led" function, KTT would additionally serve a mission to raise awareness and detect needs in companies, especially SMEs, which still need to build innovation capacities and initiate innovation processes. The aim is to enlarge the base of potential clients for the KTT of CTI in general. The history and structure of KTT indicate that they are driven and run according to the technology-push philosophy of Swiss policy and respond to the "science to market" credo of CTI: as such, if properly run, they are suitable instruments for the objective of valorization of research results in the economy.

107. **However, the need for a territorial dimension for these consortia is unclear:** for a technology transfer mission, proximity does not matter as much as it does for an innovation awareness mission. And indeed the KTT are in line with the philosophy of operation of CTI, which to promote innovation at the level of the whole country. As mentioned above, the regional dimension is not the key focus of CTI promotion: differentiated impacts of CTI activities across Swiss regions is a natural result of the variety in capacity and absorption level from companies and PROs in different parts of the country, not the result of a strategy from CTI. While thematic grouping of expertise under the KTT appears useful for companies, to ensure more visibility on available scientific and technology potential, the territorial definition of the KTT does not seem to respond to the reality of functional regions in Switzerland. The four generic regional KTTs are similar in size but different from the “Grandes Régions” or functional regions identified in Chapter 1. The identification of joint mission and cooperation opportunities by PROs on a purely territorial basis is also more difficult to achieve than on the basis of thematic expertise.

108. **The KTT face some challenges: matching the demand of companies, boosting quality of cooperation, and competition with regional and cantonal initiatives.** A first challenge for KTT is to access and detect technology needs in companies with low absorptive capacity. The high costs and weak returns of targeting such an audience act as a strong barrier towards such an evolution. In addition, competences and profile of the advisers in charge of a demand-led mission should be different than technology advisers: technology advisors attached to specific centres have a principal interest in finding clients for their own parent organisations rather than spending efforts to connect them to other providers, hence it is a challenge to recruit advisers that can play this more generic role. The responses from KTT to companies’ needs can only be partial since these responses cannot properly cover the multi-faceted dimension of innovation: companies that are not yet organized for innovation need more than technology only to evolve along this new trajectory. One symptom of this difficulty is the fact that companies’ views have been downplayed during the whole process of establishment and launch of the KTT. A second challenge relates to the quality of cooperation in the KTT consortia. The KTT have been established from a top-down perspective despite the fact that there were calls for tenders for submission of potential consortia ideas. As a result, some consortia are the result of “forced marriages”, a situation that impinges on the quality of cooperation at the heart of the consortia. Third, the various KTT enter into competition with bottom-up initiatives from regions and cantons, claiming to follow similar goals: since sub-regional authorities have not been involved at the origin of the initiative, distrust and competition are likely to emerge whenever they feel that the KTT overlap with their own initiatives, as will be assessed in more detail in section 3.3. Overall, these are classical difficulties also experienced in other countries and regions, when trying to turn technology-driven instruments into demand-led ones (Box 18). Learning from these difficulties can help Switzerland avoid some of the pitfalls experienced in similar initiatives.

Box 18. Supply-driven or demand-led innovation policy instruments

The first S&T (Scientific and Technological) intermediaries were established in Wallonia begins in the sixties: collective research centers have been implemented by sectoral organizations and supported by the Belgian State. Their role was to carry out applied research activities in their fields and to transfer those results to enterprises belonging to their sector. Since that time, many others intermediaries have been set up, some organized at local or sectoral levels, others directly attached to universities and research centers. Together they form a rich set of organizations, but the question of the collective effectiveness of their support for technology diffusion and innovation promotion in the industrial fabric, remained open.

Acknowledging the importance of innovation for its regional development, the Walloon Region launched a new framework for innovation policy in the late nineties. A priority was placed on the cooperation between S&T suppliers and enterprises as well as the valorization of university research results. Companies needs in S&T field and the role and position of S&T intermediaries regarding these needs were not really well known. A study was therefore carried out in 2004 and organized as a participatory process involving the main stakeholders of the regional innovation system. The final objective was to propose a systemic reform improving the support to firms and in fine the innovative capacity of the regional industry.

The study found that:

- The system is large, not clearly visible by its target group, and mainly funded by public money. Intermediaries belong to various families: university interfaces; research centers; business and innovation centers; specific networks; public institution specifically set up for transferring technologies.
- These intermediaries do not form a real system, but show rather an addition of self-oriented strategies: most of these institutions offer connecting services to firms in order to serve their own business which is research activities. Very few of them are real intermediary services. Their strategies in that field may be summarized as self-oriented, mainly driven by a (sub-) regional supply-side approach. Although many of these centers are complementary and do not compete with each other, the level of cooperation is quite low, except between members of a family (universities) and between more organized networks. Most of the actors don't know what the others do and what they are specialized in. They are therefore unable to inform and to advice firms on others competencies they may find in Wallonia.
- Intermediaries' clients are often well known innovative enterprises. Small firms with low innovative capacity are difficult to bring into the system. Many centers work with regular clients belonging to their own sectors or close to their business. Only 20% of the clients are firms with low innovative capacity while these firms represent around 60% of the total number of firms. An effective intermediary system should lead to a regular increase of small firms with low innovative capacity as new beneficiaries of public funded services.
- The system remains driven by a supply side approach and not by the actual needs of regional firms. Answering the technological needs of regional firms, including non innovative firms, does not appear at the top of the agenda of most of these services providers. The first criteria to organize their activities are the benefits for their own institutions.
- Both the efficiency and effectiveness of the whole system are low. The effectiveness of the intermediary system, measured as the link between the inputs and the performances of the system, seems quite low. Even if results are not evaluated on an individual or collective basis, this analysis shows that regarding the size of the system and the number of suppliers, the performances in terms of number of clients or more generally in terms of innovative firms and level of innovation remain quite insufficient.
- The group of most innovative firms represents a very limited share of the regional industry. They have significant S&T needs, but don't really use intermediary services. These firms have developed their own access to S&T suppliers. The role of intermediaries appears thus limited for this target group. The other two groups are firstly innovative firms adapting existing technologies incorporated in new equipments and less interested by specialized S&T services but looking for more applied and technical service. Finally, the largest part is the firms with limited innovation capacity which don't develop innovation strategies and are not involved in the S&T network. The needs of this last group are much larger than S&T support. The main impediments to innovation for them are a lack of management skills, financing support, a lack of internal qualifications and of adequate information.

The main challenges for improving the effectiveness of the Walloon S&T intermediary system were spelled out as follows:

- To shift from a self-oriented approach towards a more open and interactive approach giving room for new questions and for enlarging the number of potentially interested firms;
- To ensure services providers are connected to each other and able to better take advantage of their complementarities and their knowledge and goodwill;
- To increase the incentives for cooperation and the development of common tools facilitating the exchange of information and of “clients”;
- To better articulate a first stage support on innovation covering all related aspects (management, finance, design,...) to a more specialized high tech service requiring high qualified experts;
- To better articulate a first stage support on innovation covering all related aspects (management, finance, design,...) to a more specialized high tech service requiring high qualified experts;
- To improve the visibility of services offered and to better inform enterprises on the structure and organization of the system;
- To enlarge the number of firms with limited innovation capacity accessing to S&T and intermediary services and finding a real value added in the support offered.

Source: Nauwelaers et al. 2004

3.1.4. Developing demand for innovation by innovation cheques

109. **In order to kick off a process of research collaboration between SMEs and universities, innovation cheques were launched in 2009.** In 2009, as part of the Swiss crisis stabilization package, CTI launched innovation cheques, with a budget of CHF 1 million. The objective of the scheme is to facilitate access to research by companies that are not yet clients of CTI and increase R&D carried out in cooperation between public and private actors. The cheques, of a nominal value of CHF 7500, are accessible with minimal procedures to companies (on a first come, first served basis), and can be redeemed in Swiss universities. They give access to around ten days of free work from universities: this is aimed at facilitating the start of R&D partnerships. Following numerous sensitization events organized by CTI and the KTT, concentrated in the cleantech and smart material sectors, the cheques have been distributed in less than a month.

110. **The innovation cheque is an appropriate scheme for starting new collaborative projects, but less so to attract new companies into such partnerships.** An evaluation of the scheme has been carried out after a few months of operation (Good et al. 2009). The evaluation delivered positive results in terms of: the popularity of the scheme (both for SMEs and knowledge institutions), its ease of access, its follow-up in the form of a CTI project, its additionality. The cheques were mainly used as a feasibility phase for a larger project. A positive fact is that 77% of companies are not clients to CTI. The scheme seems particularly relevant for smaller companies, active in traditional branches of activities. However the evaluation of the scheme stated that the proportion of companies with pre-existing linkages in the Swiss university system is too high (54%), considering its goal to increase the number of SMEs newly engaged in research cooperation. Hence the scheme acts more as a first step for starting a cooperative R&D project rather than as an awareness raising channel for companies that are not yet connected to knowledge sources (the 46% of companies that are newly engaged in partnerships with research organizations can be seen as a

positive outcome of the scheme). This is in line with CTI's mission, which is to focus on the strongest actors, but leaves the question of how to ensure more widespread innovation in the economic fabric open.

111. **Evaluations of the scheme are recommended, with a view of possible adaptations.** Lessons from similar schemes in the Netherlands (Box 19) point towards the danger of one-off stimulation without lasting effects. This needs to be checked through further independent evaluations of the Swiss innovation check over time. The option of extending the range of knowledge providers to private and foreign actors, like in the Netherlands, deserves consideration in Switzerland.

112. **The innovation cheques scheme does not foresee a role for sub-regional organizations.** In addition, the role of cantonal and regional actors and initiatives in promoting the scheme has been minimal, which raises again the issue of complementarity and synergy between federal and regional initiatives for innovation promotion.

Box 19. Innovation voucher in the Netherlands

The Dutch Innovation voucher has its origin in a small scale project launched in the Dutch province of Limburg in 1997, under the name "research voucher". After a positive evaluation of this first experience, it was subsequently extended to two other Provinces and to the whole country under the name "innovation voucher". Its aim is to support innovation in SMEs through enhanced cooperation between SMEs and knowledge producing organisations (universities, public research institutions). Similar to the Swiss innovation check, the Dutch innovation voucher, of a face value of €7500, can be used by a company to get access to research work at a public research organisation. In 2004 and 2005, 1120 vouchers have been distributed in three waves, for a total budget of €8,25Mio. The demand exceeded by far the supply, as in Switzerland. At that time, there was a main difference between the two schemes: the Dutch voucher was assigned randomly to companies through a lottery, rather than on a first-come, first-served basis. This original procedure eliminates the selection bias (the fact that the more active and innovation-aware companies are more likely to become owners of the vouchers).

An evaluation on the 2004 and 2005 rounds (Cornet et al. 2007) finds that as a result of using the scheme, Dutch SMEs commission more research to public research institutes. However, this evaluation warns that this effect might not last: after project completion, SMEs do not seem to continue to cooperate with the research organisation. Like in Switzerland, most companies are new clients of the innovation agency (Senternovem), additionality is high (80% of companies – the same figure as for the Swiss voucher- would not have carried out the project without the voucher), and administrative burden perceived as low. The main effects of the vouchers seem relatively marginal: the use of vouchers has impacts on improvements in innovation processes, but not on product or process innovation. Another evaluation was carried out on the period of 2005-2006, and was again very positive. However, it noted that up to 40% of innovation vouchers are actually not used, a downside of its ease of access.

Following successive evaluations, the Dutch scheme has grown in size and evolved. A new important evolution is that Dutch SMEs are now able to use their vouchers not only with domestic public research institutions, but also with private large companies, private non-profit research organisations, and foreign public research organisations (in Belgium, Germany, Sweden and Scotland). The allocation procedure in the form of a lottery starts only after a certain point of demand saturation. Two types of vouchers are available: small vouchers of 2500€, which can be used in public research organisations, and large schemes of 7500€, for which the company has to pay one-third of the costs (this is a new feature from 2006). Companies can access the big vouchers if they have not been recipients of large subsidies in the past 3 years, and can access small vouchers only once. The 2009 budget for vouchers is € 26,25Mio.

Source : www.senternovem.nl/innovatievouchers

3.1.5. Promoting entrepreneurship and start-ups

113. **CTI is active in supporting new firms creation in Switzerland through two initiatives: CTI Entrepreneurship and CTI Start-up.** CTI Entrepreneurship has the broad goal of promoting entrepreneurial spirit and support the creation of new companies throughout Switzerland. The instrument used is the advisory and training program “venturelab”: it offers targeted training modules to potential young entrepreneurs, as well as those who are already active. It is carried out by the three types of universities. CTI Start-up exists since 1996: it supports innovative individuals to set up new companies by means of coaching and advice. Regionally-based CTI coaches perform this function. CTI also distinguishes the most promising ventures by means of the CTI Start-up label, which helps these companies get credibility on the financial market.

114. **Complementarity between CTI and cantonal/regional activities in start-ups promotion is not ascertained.** CTI had the first move with these initiatives and has developed a visible network of start-up coaches, but several cantons or regional organisations promote such services too. It is not clear whether these target different groups and act hence in complementarity, or whether there is duplication or unnecessary competition. In the canton of Bern, the view is that of a complementarity: high-flyers are the target of CTI and they are given long term support, low-flyers are cared for by inno-BE, which provides short term support. In Western Switzerland, the feeling is that there is rather substitution and overlap and lack of recognition of existing competences in cantons. Venturelab is perceived by some as an initiative by the University St. Gallen only.

3.1.6. The Universities of Applied Science

115. **An increasingly important role is played by the Universities of Applied Science.** The Universities of Applied Science (UAS) have been founded in 1995 via the merger of a large number of engineering schools spread over the country. These 7 UAS have received a triple mission: education (including lifelong learning), applied research and services to society. Attracting one third of the country's student population, they have acquired an important and specific position in the Swiss higher education system. Their main characteristic which distinguishes them from other HEIs is their practical orientation. UAS are jointly run by the Confederation and the cantons, which involves a complex governance structure (OECD 2006). The Confederation funds one third of UAS' operating costs. They receive money from cantons, which fund parts of the costs (often on a cross-cantonal basis). The rest of the funding comes from student fees and third party funding (CTI grants, specific projects). Two-thirds of the CTI innovation vouchers are used in UAS. This funding arrangement creates a challenge for UAS. The danger is that CTI grants for collaborative R&D projects or for KTT are seen primarily as means for filling funding gaps rather as means to undertake projects driven by industrial demand. During the implementation phase of the UAS, several peer reviews have been carried out in order to secure the quality of studies at UAS, and accreditation and quality control systems have been put in place in line with the Bologna agreement. New constitutional arrangements have been voted in 2006, which place the UAS under the same regulations as other universities, in order to secure their full integration in the national and international higher education landscape.

116. **Despite common challenges, there is a large diversity amongst Universities of Applied Science.** An evaluation of the CTI funding for UAS, carried out in 2006, noted that the various UAS showed a large diversity of profiles and specialization, and that the notion of applied R&D differs quite a lot from one establishment to another (Mayer et al. 2006). The UAS are confronted with difficult challenges in attracting and retaining good researchers, since their positioning on the research front is quite unclear. The impact analysis revealed that:

- At project partner level (companies), the main impact lies in the improvement in thematic and R&D competences and in the ability to cooperate with UAS partners, rather than in economic impacts. Most of the firms participating in the funding schemes are companies that were previously involved in CTI projects;
- At UAS level, CTI funding helps establish R&D competences and plays a role in providing legitimacy to UAS as technology transfer institutions recognized by companies. The evaluation stated moreover that CTI contributes to, but is not in a position to influence strategic positioning of the UAS directly. The evaluation gathered evidence of a continuous learning curve from CTI to adapt its funding to the needs of UAS. The thematic diversity of applied R&D projects at UAS poses challenges for the CTI selection process.

117. **KTU should help UAS to match their goal of responding to SMEs needs.** The “third mission” of UAS has a regional dimension, since it is expected that the UAS would deliver services in priority in their regional environment. A challenge for the UAS is to develop thematic priorities in line with SMEs’ needs. Creating more direct links and cooperation with demand-led structures such as clusters or industrial associations is one option. In practice, it proves difficult to organize a strict matching between UAS thematic orientations and the economic specialization of the regions in which they are located. It is the role of the KTT to organize networks involving the UAS in order to improve accessibility to UAS knowledge from companies or other stakeholders: efficient networking is one answer to this need for better match.

118. **The complementarity between “top-down” federal innovation policy and “bottom-up” regional innovation promotion initiatives needs to be clarified.** A possible evolution of Swiss innovation policy, towards a more demand-led approach, incorporating spatial considerations, was suggested by previous OECD work on Switzerland (OECD 2006). The critical overview of Swiss federal innovation policy in the above sections has shown that existing policy instruments at federal level fall short of addressing such a shift. This raises the issue of possible complementarities and a division of labour between national and regional innovation policies in Switzerland. To this end, the next sections analyze the situation with respect to innovation policies developed at the regional level and the role played by NRP. The last part of this Chapter will address the question of multi-level governance of innovation in the country: what should be the general objectives of policies at the various levels? What should be the target groups, instruments and cooperation mechanisms between the various levels, to ensure synergies and effectiveness of the whole system?

3.2 Swiss regional innovation policy: state of play and role of NRP

3.2.1. Innovation promotion at regional level in Switzerland

119. **There is a large diversity in the nature, scope and funding arrangements for cantonal initiatives for innovation promotion.** Even if the NRP is expected to fund new initiatives, these did not emerge from a vacuum: they rested on existing innovation promotion activities at sub-national level. With the launch of the NRP, the huge diversity in regional innovation promotion activities, at regional and cantonal levels has become more visible. These initiatives fall under the economic promotion activities of the cantons, for which the traditional instruments are infrastructure provision and taxes. The type of innovation promotion activities found across cantons include: collective awareness-raising events; first line generic short business advice; second-line more specialised business advice; start-up advice; training services for entrepreneurs, support for projects development; cluster facilitation (e.g. a major orientation in Nidwalden), see Box 20; brokerage towards specialised resources, including finance providers; technology brokers and coaches; provision of hard infrastructure (incubators).

120. **The mix of activities and the balance between them vary greatly: some offer a narrow range of them, others a full range.** Many structures target the whole economic fabric, but some are specialised in specific sectors (e.g. i-net Basel). It seems that often, because of their small scale, delivering agencies have in reality a core business which defines their main activity despite a wider menu offering (e.g. cluster management for innoBE in Bern). These activities are delivered either by economic promotion services of the cantons directly or by dedicated agencies funded by the cantons (e.g. inno-BE for Bern, Creapole for Jura) or several cantons (Platinn). The funding structures vary greatly, from fully publicly-funded structures, to privately-funded structures (e.g. inet-Basel), and a majority of mixed funded structures. CTI funds the KTT, and some of them also get funds from the cantons within the NRP framework. In some cases such funding can make an important quantitative difference from the pre-NRP period. Linked to that diversity, the financial contribution of companies range from “all free” services to “all paying” services, but in most or all cases price paid is below market price. The border line between such services and private consultancy services might get blurred in some cases.

121. **The visibility of regional innovation promotion initiatives is limited.** These regional innovation promotion activities are mostly small-scale, locally-focused, and local resources-based activities (now complemented by national funding from NRP). Due to the institutional structure of the country, there is no complete view on these initiatives, which are run in full autonomy at cantonal (or sub-cantonal) level. Systematic information covering these practices does not exist.

Box 20. Cluster initiatives in the tool box of regional innovation promotion

An analysis of cantonal clusters initiatives in Switzerland has been carried out in 2008. This analysis reveals that clusters are a frequent object for cantonal economic promotion, but that they also cover a wide variety of different initiatives, under various labels (clusters, poles, networks, economic motors, etc.). Many cantons have undertaken analyses of existing clusters, based on a mix of economic diagnoses and consultations of actors. The existence of synergies between local actors is often an important criterion for deciding about clusters in a region. The analysis has found 62 clusters initiative, half of which of cantonal scope. Those clusters are almost equally spread in three categories: i) clusters with a market orientation; ii) clusters with a value-chain focus and iii) clusters with a knowledge and technology transfer dimension.

The instruments used to support clusters fall in two categories:

1. General economic promotion instruments: taxes, support to enterprises creation, industrial spaces. Some cantons use these generic instruments in a selective way to promote certain activities
2. Specific cluster initiatives: support for promotion, information or knowledge transfer in the domain of activities of the cluster. In this case, the private sector is often strongly involved and the support takes the form of public-private partnership, with the public sector playing a catalyser role.

The analysis notes that few cluster initiatives are subject to evaluations. Half of cantonal plans produced under the NRP include cluster promotion activities. This raises the issue of the need for coordination and of checking additionnality and value-added.

Source : Eco Diagnostic 2009

122. **The quality of these regional innovation promotion activities is highly variable.** The SWOT analyses in the cantonal plans are limited in scope and often the task of a few officials in charge rather than the result of a thorough independent analysis. There is no evidence that adequate quality control mechanisms are in place for innovation promotion actions, and independent evaluation practices are

extremely scarce. When quality control and/or evaluations are present, they are most often conducted internally, without inputs from external actors. Because of the fragmentation and lack of exchange on cantonal activities for the promotion of innovation, there is a high danger for reinventing the wheel across the country. The small scale of many initiatives and agencies prevents an investment in professional development of tools and methods to support innovation.

3.2.2. The expected changes in regional innovation policy with the NRP: lessons from the past

123. **The NRP requires regional innovation policies to become strategic and more effective.** As developed in Chapter 2, the advent of the NRP brought a major change in perspective with respect to previous instruments of regional policy, especially Regioplus and LIM. Regional initiatives under the NRP need to display a stronger strategic orientation, as the supported projects should develop more synergies and contribute to higher level development goals. The nature of the support has shifted from infrastructure towards integrated, innovation-oriented economic development initiatives. In addition, public funding should act as an impulse for initiatives that can become self-supported over time; and the centre of gravity for the elaboration and implementation of regional development policies has shifted from the regions to the cantons. These evolutions present important challenges in terms of governance and capacity at the sub-national level.

124. **It might be difficult to achieve this due to lock-in in past policy paradigms.** An evaluation of Regioplus, which shares with the NRP the goal of promoting competitiveness through structural change and innovation in rural regions, carried out in 2007 points at challenges that are also relevant for NRP (Ecoplan and al. 2007). The majority (two-thirds) of projects supported by Regioplus falls under the domain of tourism. A few projects were also supported under the category “competences centres”. The evaluation rightly notes that the dominance of individual projects in the tourism area did not really respond to the general objective of Regioplus. The assessment of the innovative character of the projects differentiates between projects with the following degrees of novelty, and calculates the share of projects which cover innovative ideas at each level.

125. Half of the projects (49%) are innovative at the sub-cantonal or cantonal levels only. Cross-cantonal (19%) and national projects (22%) are more seldom, and international projects rarer (10%). This illustrates the difficulty to move beyond the cantonal level for defining regional development projects. As noted in Chapter 2, this problem of scale persists in the frame of the NRP. Another finding from the Regioplus evaluation is that most of the projects remain dependent from public funding after the period of public support. In terms of impacts, the evaluation suspects that Regioplus must have contributed to a rise in regional value-added, but without being able to quantify this impact or to exclude crowding out effects of the programme² (i.e. a possible lack of additionality). The job and value-added creation impact of RegioPlus was deemed impossible to estimate, due to the too large distance between impulses created by Regioplus and the job and value added creation phenomenon. The small scale of Regioplus (CH 69 million over 10 years) also militates against searching for a direct relationship between the outcomes of such a programme and economic impacts.

126. **NRp presents challenges in terms of the scale of action and capacity development at regional level.** This Regioplus evaluation points towards difficulties that are likely to remain under the NRP, due to inertia in policy-making, to persistent capacity problems, to difficulties for inter-cantonal cooperation, and to the small scale of NRP funding and its indirect links with economic performance. Most of these points have been discussed in Chapter 2 for the NRP as a whole, and apply to the innovation dimension of the NRP.

3.2.3. Achievements with respect to innovation under the NRP

127. **Limited strategic monitoring of the NRP hampers a detailed analysis of the innovation content of cantonal plans.** In Chapter 2, it was pointed out that capacity limitations are likely to act as barriers for the development of innovation strategies at cantonal level. Two main questions arise here: how far is innovation present in those plans, and what is the content of the innovation-oriented part of the plans. The lack of detailed and harmonised information on projects supported under the cantonal plans makes it difficult to answer these questions accurately. A more detailed reporting process for NRP at project level is needed to ensure a strategic monitoring of the programme.

128. **Innovation promotion is part of cantonal plans, but the weight of this dimension remains unknown.** The first question above can be approached by looking at the synthesis of development plans' content carried out by Regiosuisse³. This synthesis includes 20 categories, but none of them refer explicitly to innovation. Hence initiatives under innovation might be hidden in several categories and cannot be easily extracted from the data. One category is "transfer and knowledge management in industry, trade and services" and might be closest to a (narrow concept of) innovation (e.g. innovation in tourism may also be found in other categories). This category includes 30 projects out of a total of 337 projects. Since the indicator: "number of projects" as a measure of priority orientation of the plans has clear limits, few conclusions in terms of overall innovation intensity of the plans, can be drawn from this analysis. Relative budget values would need to be assigned to these projects to improve this approximation, but the monitoring procedures of the NRP do not allow this (see Chapter 2).

129. **Where successful strategic innovation policy exercises are carried out, innovation seems to stand out more prominently.** The 30 projects with an innovation label are spread over 18 cantons. The cantons of Jura and Vaud stand out for their large number of innovation-oriented projects. This is most probably linked to the successful process followed under the RIS Western Switzerland, as a support for the preparation of the plans (see below).

130. **Numerous innovation-oriented projects are funded under the NRP.** They tackle a very diverse range of initiatives: some overlap and some differ from federal instruments. An important component of the plans is technology transfer initiatives, in line with the main orientation of the national innovation policy. But there are also numerous initiatives which target companies directly, either new ones or existing ones, and address wider innovation needs through e.g. cluster initiatives, and offer soft support (advice, coaching) for which geographic proximity matters. An example of promotion of innovation in enterprises is the intercantonal project Platinn, an innovation support network linked to RIS Western Switzerland. Those orientations point towards possible complementarity with the national policy orientation (see section 3.2 for a discussion on this point). Those projects often include a thematic or sectoral focus, which is another differentiating factor from the federal approach. The innovation-oriented programmes and projects in the plans cover the following topics:

- i. *Organisation of Technology transfer* (Technology transfer, science-industry relationships (several occurrences, the most frequent) (Box 21); Networking of scientific and technology transfer potential, including the support to the KTT initiatives; Competence centres, specialised technological poles);
- ii. *Support to innovation in SMEs* (Promotion of innovation in enterprises; Support for SMEs; Networks of SMEs for knowledge transfer; Clusters in TIC, life sciences and energy, with incubator and SMEs support; Innovation watch system);

- iii. *Support for new firms creation* (Support to new firms and start-ups (Box 22 for concrete examples); Stimulation of youth entrepreneurship and creativity; Incubators linked to High Schools;
- iv. *Human Resources Development* (Training and education actions; “School and science” actions); *Policy governance* (Strategic exercises, participation in RIS projects).

Box 21. Technology Transfer and clusters in Fribourg

The scientific and technology pole of Fribourg aims at providing a unique platform for technology transfer between research institutions and companies of the canton. It actually combines classical technology push activities through which companies can benefit from research results, with cluster promotion activities which concentrate on relationships between private actors. Companies finance 20% of the joint research projects, and the rest is funded by the pole, with equal shares coming from cantonal and federal (NRP) sources. The core of the pole is a technology transfer unit, which helps with collaborative R&D projects development and with intellectual property management. The pole is structured around four clusters, with a coordinator in one of the higher education institutions of the canton: plastics, energy and building, nanotechnology, IT and security systems.

Source : www.pst-fr.ch

Box 22. Support to company creation in Swiss regions

A typical intervention area of Swiss regions and cantons in innovation policy concerns the support to company creation and early development. The following examples are cases where the NRP supports such cantonal initiatives:

Jura: Creapole is an initiative aiming at promoting innovation and diversification of the economic fabric of the Jura canton, one of the less developed Swiss cantons. The focus is on firms and branches with high value-added and high potential for diversification of the traditional economy towards high-tech activities. Creapole works towards the promotion of infrastructures for new companies (incubators), provides coaching and advice to new entrepreneurs, and conducts awareness raising activities for new company creation in Higher Education establishments. Creapole is a private company, partly funded by the canton of Jura, but the majority of funds come from private investors. Most of the economic promotion activities of the canton have been transferred to Creapole.

Fribourg: FriUp is an association pursuing the aim of increasing innovation capacity in existing and new enterprises. It is jointly governed by the canton, representatives from the higher education and the business sectors. FriUp functions as a first-stop shop for regional companies: it provides advisory services to companies at various stages of development, and links to specialized service providers according to needs. It has a department for start-ups, to which it provides free advice and (after selection) hosting in an incubator.

Neuchâtel: Neode is another technology park offering space and advice for new and established innovative companies, with a specialization in nanotechnology and microelectronics. It works with a network of specialized partners. It is an initiative of the canton, like the Finergence fund for start-ups: the fund provides loans as seed-money for feasibility studies before company creation.

Typically, these territorial initiatives do not provide direct funding to innovative companies or company creators, but act as intermediaries for those companies to access funding sources (risk capital, specialized investment funds, etc.). Most are run as private companies, but are strongly linked to regional authorities: they implement a public support mission for the canton and benefit from public support (federal, cantonal, sometimes regional) in addition to private investments, and work under the “triple helix” model (gathering governments, businesses, and knowledge institutions).

Source: www.friup.ch; www.creapole.ch; www.neode.ch.

131. **In conclusion, the NRP has placed a focus on innovation in cantonal plans, and this has been effective in pushing this item on cantonal policy agendas.** While NRP is “small money”, it can act as an effective leverage for supporting cantonal innovation policies, when there is a sufficient concentration in those projects. The leverage effect can be obtained through the additional funding offered to cantons, but also to a certain extent through a labelling effect. Where successful strategic innovation policy exercises are carried out, innovation seems to stand out more prominently. The 30 projects with an innovation label are spread over 18 cantons. The cantons of Jura and Vaud stand out for their large number of innovation-oriented projects.

3.2.4. The inter-cantonal dimension in innovation promotion

132. **The inter-cantonal dimension in innovation promotion is not well developed.** Regarding the territorial level at which regional innovation promotion is conducted currently in Switzerland, the situation is as follows: there is an ongoing major trend for streamlining actions from regions to the cantons, and a minor trend towards inter-cantonal actions. The legacy from previous regional policy instruments where the target groups were the regions is visible here. Many cantons are struggling towards lifting their strategies from the sub-cantonal regional to the cantonal level, and hence do not feel ready yet to enter into inter-cantonal joint development.

133. **Barriers exist for in inter-cantonal cooperation for innovation promotion.** As mentioned in Chapter 2, there are important disincentives for inter-cantonal cooperation, which are at play for regional innovation promotion too. All cooperation steps are concerned with this difficulty, from the less to the most sensitive ones: sharing information on actions, exchanging on methods and building joint tools, developing cooperative projects, implementing joint activities funded on a multi-cantonal basis. It is not rare to hear views such as “a canton cannot pay for an organisation which is in another canton”. One of the communities of practice established by Regiosuisse was supposed to work on the following theme: “Implementation process of the NRP, inter-regional, inter-cantonal and international cooperation”. Regiosuisse reports that the work of this community had to be terminated due to the lack of interest of local actors in the theme4. Significantly, those themes that were dropped from the work of this community concerned the territorial cooperation. The documents from this working party refer to barriers to inter-cantonal cooperation linked to inter-cantonal competition.

134. **Despite an unfavourable setting, there are experiences with inter-cantonal innovation promotion.** An in-built contradiction exists within the NRP, which asks for cantonal development plans as well as for inter-cantonal cooperation. As a result, inter-cantonal initiatives need to appear under one cantonal plan only and hence be placed under the responsibility of one canton even if it is a joint initiative. Also, the official procedure for NRP funds allocation creates competition between cantons, since money is preferably allocated to cantons presenting the best plans. The example of Western Switzerland (Box 23) shows though that inter-cantonal cooperation can work, although not without difficulty, and there are other examples in the field of technology transfer (e.g. i-net Basel is funded by 3 cantons, ITZ by 6 central Switzerland cantons, etc.). Inter-cantonal cooperation is institutionalised in other sectors such as health and education, showing that such cooperation can become reality when joint interests are identified. Well-conducted strategic exercise around regional innovation policy can help foster the emergence of cross-cantonal innovation strategies. Regional Innovation Strategies (RIS) projects, when run under good conditions, may help pave the way towards inter-cantonal innovation promotion activities (Box 24).

Box 23. Structures for inter-cantonal cooperation in Western Switzerland

Western Switzerland has established the (CDEP-SO) (Conférence des chefs de département de l'économie publique de Suisse occidentale), gathering the cantons of Berne, Fribourg, Genève, Jura, Neuchâtel, Valais and Vaud. This platform acts as a support for the development of inter-cantonal projects.

One of those projects is a technology platform dedicated to « Cleantech », which is established following a prospective study ordered by the CDEP-SO. The idea is to position Western Switzerland internationally in the cleantech business, joining forces of business, research and training actors in the 7 cantons. The platform follows three others already active in the large region: Bioalps⁵ in life science, Micronarc⁶ in micro- and nanotechnologies and Alp ICT7 for information and communication technologies. They are all supported by the NRP.

The Platinn innovation support network a truly inter-cantonal initiative, is recognised as a project in all cantons involved, with a lead in the Vaud cantonal plan. Redistribution mechanisms of the NRP money across the 7 cantons are adopted but this creates an unnecessary layer in funds distribution. It also blurs the visibility of these inter-cantonal initiatives in the NRP. The role of the RIS project (see Box 21) was instrumental in achieving this cross-cantonal cooperation in Western Switzerland.

Box 24. RIS projects in Western and Central Switzerland

The RIS projects, sponsored by the European Union, have the goal to support regions to design innovation policies in a robust way. They are structured around four activities: 1) an assessment of the strengths, weaknesses, threats and opportunities of the regional innovation system; 2) a consensus building phase involving a wide diversity of actors defining key directions for innovation promotion; 3) a strategy building phase in which the key directions are expressed in the form of actions lines and 4) the setting up of a governance, monitoring and evaluation system for the policy.

Switzerland has been involved in two projects, covering two functional regions, Western and Central Switzerland. In both cases, the projects have been instrumental in developing a clearer view on SME's needs for innovation, based on robust analysis rather than just opinions from "those who know". Beyond that however, it can be said that the Western Switzerland RIS brought some good results, while the Central Switzerland RIS failed to reach its objective.

In Western Switzerland, the need for a coalition of French-speaking cantons helped to obtain the underlying political consensus and joint commitment of the 7 cantons for the strategy. Analyses were conducted and the basic idea of innovation as a business-driven phenomenon, different from R&D, went through the policy circles and generated initiatives, and a lasting inter-cantonal cooperation visible in the NRP.

In contrast, the RIS Central Switzerland started without a political consensus and was driven by a High School. In those conditions, despite the value in the substance in the analyses, and the recognition of the sub-critical size of the cantons (Obwalden has 30.000 inhabitants) results achieved remained at the level of "broad visions" since they did not benefit from political legitimacy. This RIS may have contributed to some cultural changes, but its impact on cantonal (and certainly inter-cantonal) policies remains marginal.

3.2.5. Cross-border cooperation in innovation

135. **Switzerland is a country with large potential for international cross-border cooperation.** Due to the geographic situation, the small size and high economic outreach of the Switzerland economy, the relevance of cross-border activities in innovation is particularly high (Box 25). It is also one important direction promoted by the NRP, which is supporting inter-cantonal and cross-border activities. Despite the fact that the country does not belong to the European Union like its neighbours, its boundaries are permeable to capital, people and knowledge flows. Thanks to their good level of development, the neighbouring French, Italian, German and Austrian regions, and Liechtenstein, all offer rich opportunities for developing partnerships and joint initiatives with Swiss cantons.

136. **The NRP allows regional actors to cooperate with neighbouring regions.** As mentioned in Chapter 2, the NRP integrates the participation of Swiss actors to the EU-funded INTERREG programme: CHF 40 millions have been reserved for this participation. An examination of the Swiss participation in the EU-funded INTERREG programme shows that the 20 cantons at the Swiss borders are involved in the cross-border part of the programme: the French border through the “Lémanic Bassin” and “Jurassic Arc” programmes; the French and German borders in the “Upper Rhine” programme; the Italian border in the “Swiss-Italy” programme; and the German and Austrian border in the “Alpen Rhine-Constance lake-Upper Rhine” programme. The cross-border activities of Swiss companies and research institutes are remarkable and well-known, in particular around the Basel area in the North and along the Swiss-French border on the West. The less-well known case of Eastern Switzerland is taken below to discuss the options and challenges for the NRP to capitalise on the cross-border potential for innovation.

Box 25. The case for a cross-border approach of innovation promotion

Much attention is being paid across OECD regions to the question of adapting regional innovation policies to the particular features of the targeted innovation system and companies. The challenge for regions is to identify their unique advantages and capitalize on them with the view to develop “smart specialization”. To do so, many regional innovation strategies have followed a “supply matching demand” approach, creating a bias towards autarkic approaches, confined within regional boundaries. However, even in the largest OECD regions, it is very unlikely that innovation drivers, barriers and opportunities, are all to be found within regional boundaries. The globalization of economic activity, the need to tap into and connect to wider knowledge networks, the internationalization imperative of companies, are all recognized in regional strategy documents. But regional policies mostly deploy their tools in the restricted space of the administrative region.

Thus, amongst the many issues policy-makers face when developing effective policy portfolios, the question of the relevant geographic space to deploy policies is a critical, but neglected one.

The problem is particularly acute in the innovation policy domain. This is because of three phenomena:

1. **Cross-border knowledge spillovers:** many innovation policy instruments are likely to generate spillover effects across regional boundaries. For example, the potential outreach of a technology transfer center is likely to go much beyond the borders of the administrative region in which it is established. It is hardly possible, and actually, not advisable, to restrict the diffusion of knowledge supported by public money within borders defined from an administrative perspective. Cross-border spillovers thus create problems of appropriation when the investment is made by one regional authority only;
2. **Economies of scale and indivisibilities:** the size of many regions prevents them to invest in a full innovation infrastructure matching all the needs of regional stakeholders. Innovation support services need a critical mass of activities to reach a good level of professionalization, specialized venture funds can only work efficiently when there is a sufficient base of projects to spread risks, technoparks and similar real estate initiatives with an international outlook need to be branded at the level of larger territories to get good visibility, etc. ;
3. **International and global outreach of many innovation activities:** companies are extending their value chains and markets, and their recruitment areas, towards larger territorial spaces. From a business perspective, there is no a priori reason why areas of smart specialization should necessarily correspond to administrative regions. The promotion of inter-company linkages and joint innovative ventures in the form of clusters or competitiveness poles would need to take into account this openness.

3.2.6. Cross-border potential in innovation in Eastern Switzerland

137. **Eastern Switzerland might benefit from enhanced cross-border cooperation.** Eastern Switzerland does not include leading urban metropolitan regions like the Northern or Western parts of the country. As such, it could be seen as belonging to “the periphery” of Switzerland. According to data

presented in Chapter 1, despite its high-tech orientation, this part of the country experiences less growth than the leading “motor” regions. The challenges faced by this “Grande Région” raise the question of the potential for cross-border innovation as a stimulus for growth. The peripheral location in a Swiss context could mean for example that companies face relatively more difficulties in attracting qualified workers: ensuring a more fluid cross-border market might alleviate this constraint. Current developments point towards both potential and actors’ commitment, but also to limits and barriers, for enhancing innovation in this cross-border region.

138. Cross-border cooperation exists, but is hampered by the lack of robust partnership between the various cantons in Eastern Switzerland. To start with, it should be noted that there is no commonly agreed definition of a functional region such as cross-border Eastern Switzerland. On the Swiss side, the Eastern Switzerland “Grande Région”, as referred to in Chapter 1, does not have an institutional basis. Various place-based initiatives target that area on a variable geometry basis. One main initiative, funded under the Interreg programme, covers the “Alpen Rhine-Constance lake- Upper Rhine” area. This large cross-border area, also referred to as the “Bodensee” (Lake of Constance) area, includes three Swiss cantons (St. Gallen, Appenzell Ausserrhoden and Schaffhausen), part of the German region of Baden-Württemberg, the Austrian Land of Vorarlberg and Liechtenstein. Another area targeted by some initiatives is the “Alpen Rhine Valley”. That smaller cross-border region includes the cantons of St Gallen and Graubünden, part of the Vorarlberg region in Austria and Liechtenstein, but not the German neighbouring area. Thus not only foreign regions considered as part of the cross-border area differ, but on the Swiss side too, different cantons are considered. This variable geometry can be an advantage for tailoring initiatives based on the potential and joint strategies of the areas, but also creates difficulties to gather a different set of actors in charge of economic development in these zones.

139. Innovation is part of these cross-border cooperation frameworks. One example of an innovation-oriented initiative supported by NRP in Eastern Switzerland is the cross-border cluster project around nanotechnologies: Nanocluster Bodensee. This INTERREG project is coordinated from Switzerland (canton St. Gallen). The focus of the cluster is on the utilization of research results rather than the conduct of research. Nanotechnology is a pervasive technology with potential applications in a large diversity of fields: life Sciences (medical techniques), tools and sensors, materials and surfaces (coating, printing, textile and woodworking industry), optics and electronics, nutrition. The cluster includes companies and research institutes from the large Bodensee cross-border region. The platform acts as a meeting place for generating innovative projects using nanotechnology. As mentioned above, not much is known about the effectiveness of cantonal cluster policies, due to lack of evaluations. Evaluating a cross-border cluster initiative such as the Nanocluster Bodensee presents technical challenges, but deserves much attention due to its potential broader outreach.

140. The Universities of Applied Science in Eastern Switzerland offer potential for services to the economy, and are networked in the cross-border region. The Universities of Applied Science in Eastern Switzerland are, on the one hand, the Hochschule Luzern, with specialization in Architecture and Technique, Business Management and Informatics, social work, design and art, and music; and, on the other hand, the UAS East Switzerland. The latter gathers the University of St Gallen, specialized in business management, social work and health management; the Hochschule Rapperswil, specialized in Building and Technique, and Planning, the Chur Hochschule for Science and Technique and the Technical Hochschule of Buchs (jointly funded by the cantons of St Gallen, Graubünden and Liechtenstein). The UAS East Switzerland belongs to the Trans-border Bodensee-Hochschule (IBH), a network of Higher Education Establishments from Eastern Switzerland, Germany, Austria, and Liechtenstein, in the Bodensee region. The specializations covered by these UAS are likely to find matches in the economic fabric of the functional region, but at the same time may provide technology and knowledge to other parts of the country, or act as bridges towards the other Swiss UAS. An independent evaluation of the quality and relevance of services to companies, as well as of the intensity and effectiveness of the networking between

the UAS (which points towards the role of KTTs) would be welcome, 15 years after the establishment of the UAS. The trans-border character of the Eastern Switzerland UAS should receive specific attention, with a view of possible lessons to be applied to other UAS.

141. Establishing cross-border innovation promotion centre is an example of project that faces the difficulty of reaching consensus between all regional authorities. The Swiss Institute for Entrepreneurship located in the Graubünden canton, has developed a feasibility study for a concept of regional innovation centre, with the support of the canton. The study has taken the “Alpen Rhine Valley” as the target territory for the establishment of such a centre. This is a SME-oriented region, including 1000 so-called ‘high impact’ firms, is specialised in industry, with dominant sectors being metal and machine construction, textile and food. Based on an analysis of regional SMEs’ needs, the study team developed a concept of cross-border regional innovation centre. The goals of such a centre would be to enhance innovation potential of regional SMEs, by providing information, partner search, project management support, and facilitating access to funding sources. The funding structure would rely only in a minor part on public sources (for administrative costs) and the rest would come from service sales to companies. This idea was supported by regional Chambers of commerce and industry associations. The Liechtenstein stakeholders are in favour of cross-border and cross-cantonal cooperation in SME support for obvious critical mass reasons. The Liechtenstein Institute for Entrepreneurship provides SMEs support services that could be integrated in the services of a regional centre for innovation. This feasibility study for a cross-border regional innovation centre has not been translated into a concrete initiative, due to lack of agreement and common vision between the various relevant public authorities.

142. Similar hurdles prevail for the establishment of competence centres on a cross-border basis. The Austrian region of Vorarlberg is a small industrial region, including innovative firms responsible for a high regional patenting rate (the region ranks eighth in EU patenting rates), and several industry-oriented research centres in selected thematic areas. The University of Applied Science offers tertiary education, but due to its peripheral position in Austria, the region relies on and benefits from the proximity of German and Swiss Higher Education establishments. The regional innovation policy is oriented towards knowledge diffusion rather than knowledge creation, and the facilitation of networks and industry-science collaboration partnerships (notably through participation in Austrian public-private competence centres). Swiss partners cooperate with Austrian competence centres (without being funded by Austrian sources). An Agency (WISTO) is responsible for coordination of regional instruments to support innovation and for the delivery of services such as stimulation of participation in R&D programmes, IPR consultancy services, partner search for knowledge and technology transfer programmes, etc. The current situation is that Liechtenstein and Austrian actors cooperate bilaterally with individual Swiss cantons but are faced with difficulties when trying to establish partnerships at cross-cantonal level. The creation of joint cross-border infrastructures such as competence centres has not been successful until now, because of the high complexity for managing funds from different origins.

143. The fragmented dimension of cantonal innovation promotion activities plays a role in the difficulties to establish cross-border innovation promotion initiatives. Regional innovation policies of Swiss cantons, as detailed above, are of a much more limited scale, and rely on different instruments than Austrian regional innovation policy. Cantons intervene mostly indirectly, through land planning decisions, the use of tax incentives and general economic promotion activities. There are no direct subsidies for private R&D at national or regional level in Switzerland. There are no explicit innovation policies at the regional level and the above instruments contribute to a broader economic promotion goal rather than to innovation promotion more specifically.

144. In conclusion, there are good reasons why cross-border cooperation in innovation in Eastern Switzerland should be enhanced, but there is a variety of barriers to overcome. A culture of cross-border openness and the existence of multiple informal linkages between neighbouring regions are

mentioned frequently as starting points and facilitating factors for cross-border joint initiatives. Economic relations along the supply-chains or in related activities do exist and provide ground for cross-border economic ties. However, the lack of critical mass for most of the constituting regions of the larger cross-border area (e.g. in third level education) would call for joint cross-border initiatives.

145. Barriers reported for cross-border cooperation in innovation in Eastern Switzerland include differences in administrative and regulatory frameworks, which are experienced as less stringent in Switzerland and Liechtenstein than in Austria and Germany. There are also differences in modes of public intervention for the promotion of R&D and innovation: more pro-active interventions in Austria, including direct funding to companies; more liberal in Switzerland and Liechtenstein (focus on framework conditions and public research funding). In addition, cross-border cooperation is hampered by competition between cantons on the Swiss side (for attracting companies notably), lack of incentives and of inclination towards inter-cantonal cooperation in innovation. This conclusion suggests that the overall recommendations for a better articulation between federal and regional innovation in Switzerland, do apply in particular to the Eastern Switzerland “Grande Région”. These recommendations are spelled out in the next section.

3.3. Main challenges for regional innovation policy in Switzerland

146. Reinforcing innovation promotion at regional level in Switzerland is relevant for the country's overall economic performance. The NRP introduces innovation promotion as an important component of regional policy, an evolution from the previous focus on infrastructure provision. This orientation is highly relevant to ensure widespread growth on the whole Swiss territory, through an expansion of innovative activities beyond the sectors and companies that are currently involved in innovation. The polycentric territorial development model adopted by Switzerland functions well, and provides good framework conditions for a policy aiming at wider innovation diffusion, in contrast with the situation in very centralised countries, where all resources are concentrated in the capital region and not much is left for the regions outside of this centre. And the rich potential for cross-border cooperation beyond the country's borders adds to the possibilities for regions to become actors in innovation promotion.

147. However policy instruments to reach this broad goal would need to be more clearly articulated between the various government levels, and their effectiveness enhanced in a number of ways. In order to increase the labour productivity and support sustained innovation performance in the future, innovation policy should be enhanced along four lines:

- i) Clarify the roles of national and sub-national governments in innovation promotion;
- ii) Build strategic management capacity for innovation;
- iii) Lift regional innovation policies to the inter-cantonal level and foster the cross-border dimension;
- iv) Extend coverage of NRP to all regions.

3.3.1. Clarify the articulation and ensure complementarity between innovation promotion at federal and regional levels

148. There is confusion on the roles of the Confederation and the sub-national authorities for regional innovation promotion in Switzerland. Federal level policy for innovation and cantonal (or cross-cantonal) initiatives for innovation promotion evolve in parallel, creating overlaps and gaps, missed opportunities and tensions between the various actors involved in innovation promotion. A lack of visibility of sub-regional initiatives and a lack of knowledge of these initiatives by the federal actors lead

towards the risk of under-exploitation of the potential of the NRP to improve regional innovation in Switzerland.

149. **At federal level, the policy approach is to let market forces play and intervene only to provide framework conditions**, or where obvious market failures take place (investing in science and education as public goods and in promoting knowledge and technology diffusion). Hence, there is a strong Swiss science and research policy, addressing the public sector, but no innovation policy addressing possible systemic failures and barriers for non-technological innovation. The targets of Swiss federal policies are the high-tech sector and science-based industries and companies, with a consequent accent on technology transfer activities. The key actors are, for science policy, SNF, and for applied research and technology transfer policy, CTI. This is in line with a linear concept policy where innovation directly flows from research and technology development. The other parts of the productive fabric, consisting of smaller, less technology-intensive companies, and those that innovate without R&D, are not targeted by Swiss federal policies (except indirectly through the provision of excellent framework conditions for businesses).

150. **Recent federal initiatives include the development of the KTT Knowledge and technology transfer consortia, which claim to have a territorial dimension and focus on “new customers”**. However, this is being developed without a driving force from companies, with little involvement of sub-national authorities, and with an almost exclusive focus on technology transfer while the target companies have much broader needs than technology for their innovation strategies. The efforts to twist a linear, technology-driven policy instrument towards a demand-led instrument are bound to fail: the KTT networks face difficulties to act as true networks and they are ill-conceived to act as demand-led mechanisms. Many cases of lack of mutual knowledge, conflicts and distrust between KTT and regional promotion bodies have been reported. It is unlikely that KTT will progressively absorb regional/cantonal level initiatives for the promotion of innovation. This situation is a well-known flaw in regional innovation promotion activities in Europe, which have claimed to adopt a systemic, demand-led approach to innovation policy, while being stuck in policy tools and organisations taken from a linear policy tool box. Thus, within the innovation triangle of knowledge creation-diffusion-absorption, the Swiss federal policy addresses the first two elements: knowledge creation and diffusion. This points towards a potential role for sub-national authorities in addressing knowledge absorption bottlenecks. Cantons have already started to use the NRP to fund activities oriented towards the demand by KTT, and it needs to be checked whether this might prove an effective way to stimulate absorption capacities by companies. A good way to ensure that demand-oriented support instruments are effective in meeting companies (mostly SMEs') needs, is to require private co-funding for these networks.

151. **At cantonal level, there are both interest and institutional competences, to develop innovation in the more sheltered, less technology-intensive companies**, which are natural target groups for sub-regional authorities. This involves a much broader approach to innovation, where technology development or adoption represents only one part of the innovation needs. The absorption capacity of these companies is much lower than the CTI clients, and as such not the target of the federal instruments. Proximity of the support is important to access those companies with low absorptive capacity. As depicted in this Chapter, many efforts are being deployed at regional and cantonal levels towards this target group and objective. However, cantons lack critical mass and capacities to develop such policies. Numerous cases of cooperation between cantons have been reported, but in the field of innovation, fierce competition between cantons for attracting investments represents a barrier for developing innovation programmes covering broader functional regions.

152. **The way forward for sub-national authorities would involve the establishment of a bottom, demand-led, approach to innovation promotion, developed at inter-cantonal level, and with a cross-border perspective**. The target group would be the companies with lower absorptive capacities, while those with higher capacities would remain the (indirect) target of federal policies implemented by CTI.

Existing research and technology providers need to be mobilised as it is the case in the KTT, but more importantly, complementary expertise addressing managerial and organisational deficits in firms should be made accessible too. The role of existing “coaches” under KTT needs to be scrutinised to understand the range of functions they are able to perform effectively beyond their natural role of brokers for the S&T resources in their own mother organisations. Clustering initiatives might be used (with caution), provided that they respond to a number of success criteria derived from the wide pool of experience in European and other regions. This is not a panacea, nor an easy type of policy to implement. And, as mentioned above, involving the private sector in the funding of these initiatives, is the best way to secure their relevance with companies’ needs and their true demand-orientation.

153. **Along these lines, a clearer division of labour for a multi-level innovation policy needs to be defined**, in which the federal level maintains its country-wide policy focused on knowledge creation and technology transfer for technology-driven innovation, while the sub-national level takes up an active role in knowledge absorption and diffusion, in a broader innovation perspective. In this framework (Table 13), the federal level would concentrate its role on the core activities of CTI, which have proven effective: supporting technology transfer and joint public-private R&D projects, on the basis of excellence and relevance, across the whole country, relying on strong technology transfer networks when they exist. The KTT would in this view acquire a national dimension and their specialisation be reinforced. The role of the federal level would remain concentrated on knowledge creation and diffusion. Functional regions would be in charge of innovation promotion in the wider sense and address knowledge absorption needs: this would be done by establishing networks of innovation promotion agencies and advisors, covering the local and cantonal dimensions, coordinated and quality-controlled at the level of the functional region. This mission includes linking with KTT when technology needs are at stake. The target groups for the federal level should be the innovative, technology-advanced companies, while the target groups for the regions should be the companies innovating in a learning-by-doing and learning-by-interacting mode.

Table 13. A multi-level framework for Innovation Policy in Switzerland

Level	Objectives and Targets	Instruments
Confederation	<p>Knowledge creation and diffusion</p> <p>Support excellent research at public research organisations. The focus should remain on frontier research.</p> <p>Stimulate technology transfer and public-private R&D cooperation</p> <p>Target firms: technology leaders active in global markets</p>	<p>SNF funding programmes, funding for federal Polytechnical Schools, co-funding of Universities of Applied Science and cantonal universities</p> <p>CTI: funding for collaborative research, KTT transformed into national scale instruments</p> <p>CTI: high-tech start-ups support</p>
Functional regions (inter-cantonal level)	<p>Knowledge absorption</p> <p>Stimulate innovation in wider sense, incorporating also non-technological issues</p> <p>Target firms: technology followers and “learning-by-doing”, “learning-by-interacting” firms</p>	<p>Universities of Applied Science (co-funding, performance assessment) and cantonal universities</p> <p>Regional innovation agencies (central node of a network): professional and quality controlled, co-funded by NRP, cantons, and private sector</p>
Cantons (and regions)	<p>Knowledge absorption</p> <p>Connect local firms to knowledge networks</p> <p>Help alleviate managerial bottlenecks for innovation</p> <p>Target firms: technology followers and “learning-by-doing”, “learning-by-interacting” firms</p>	<p>Cantonal (or sub-cantonal) antennas for regional innovation agencies offering proximity support to companies: advisory services, cluster animation, etc.</p>

3.3.2. Building strategic management capacity for innovation policy

154. Capacity gaps are at play to conduct innovation policies with a regional dimension.

Comments were made in the Chapter 2 on the need to address capacity gaps at the level of the cantons to develop strategic and robust plans under the NRP. At federal level too, barriers exist to take full advantage of the new means offered by the NRP. These difficulties apply in particular to the innovation dimension in these plans.

155. There is a gap between the mission of the NRP and the tools put at the disposal of the federal level to monitor its implementation. The federal level is not well informed about the innovation promotion efforts of the cantons, and is very cautious about taking any steps towards playing a catalytical role towards such activities. The institutional structure of the country does not allow this. Notably, the ex-ante assessment of the cantonal plans cannot be properly carried out in the absence of such information. The NRP however presents an opportunity for SECO to indirectly get information on these activities. As mentioned already in Chapter 2, the NRP assessment procedures are weakened by: limitations in internal capacities at SECO (based on expertise of a few people only); existence of “degrees of liberty” in the use of official assessment criteria; absence of external expertise. This means that the system is not immune of pressure from interest groups, which creates a need for more transparency of funding allocated. The NRP assessment and monitoring system should also be improved with a view of more professionalism, independence and transparency. Using external experts for the assessment of cantonal plans would introduce both more transparency and more expertise in the analysis of these plans. Monitoring should move beyond the pure administrative follow-up and prepare for sound, robust and external evaluations. Lessons from the implementation of EU Structural Funds to support innovation could be used to this purpose (Box 26).

Box 26. Strategic bottlenecks for innovation promotion under EU Structural Funds

A strategic evaluation has been carried out on the strategies put in place for the use of EU Structural Funds for the knowledge economy, for the period 2000-2006. The evaluation has put in evidence the following main bottlenecks for an effective outcome of RTDI measures under these programmes, which bear similarities with the Swiss situation:

- An administrative, rather than strategic management of RTDI measures;
- A lack of expertise at national and regional levels in managing RTDI measures adopted under the Operational Programmes;
- A continuing dominance of supply-side measures, and technology-oriented measures, with poor relevance to specific regional innovation systems;
- A limited interest for many ‘softer’ ‘demand-side’ measures aimed directly at enterprises.

Accordingly, the challenges for the future use of Structural Funds for building knowledge economies have been identified as follows. First of all, policies would need to be based more strongly on sound and robust analyses of the regional innovation systems, and incorporate actions and instruments that fit the needs of these systems. This will give rise to much more differentiated policies than is the case hitherto. A shift towards demand-oriented policies is also warranted, but this is even more demanding in terms of strategic capacities for policy design and follow-up. A better acknowledgement of all forms of innovation, beyond purely technological innovation, needs to inspire policies. Most importantly, since the role of Structural Funds is to contribute to competitiveness and catching-up of regions, preference should be given to those actions and initiatives which are most likely to generate economic value. Prioritising ‘downstream’ research developed for the needs of markets is needed in such types of programmes.

Source: Technopolis, UNU-MERIT, Lacave, Ismeri, Logotech 2006.

156. **There is a need for more strategic view on regional innovation promotion activities.** The system would benefit from a clarification on where the best local competences in innovation promotion lie, and from more visibility of available services in given territories and throughout the country. This would help address the limits of small-scale, disconnected initiatives, and support the selection process for NRP funding. Involving companies in assessing (through enquiries) and funding regional innovation promotion schemes is a necessity (see below).

157. **Evaluation practices should be reinforced and linked to funding.** Evaluation of funded regional innovation projects would need to take place in order to raise their impacts and ensure that the stated objectives are met at project and programme levels. An evaluation of the first 16 pilot projects of the NRP has been carried out in 2007 (Infras 2007). It indicated two problems: the utility of the projects were rarely made visible to target group (companies) and they were not used frequently by the beneficiaries. Because of the timing of the evaluation, it was not yet possible to assess the private sector's readiness to fund the initiatives after the end of the public grant. Similar to the Regioplus evaluation, this evaluation could not determine whether the supported projects contributed to structural change and competitiveness in the regions, due to the attribution problem (and the short history of the projects). Sound and independent evaluations are needed for the cantonal plans as a whole, and for specific areas including innovation, in particular. Diversity in approaches and competition should be maintained, but public funding should be more attached to performance. This concerns both federal (NRP) and cantonal funding for innovation. Mechanisms of performance reserve could be established when evaluation mechanisms are adopted and effective.

158. **Companies' views should be integrated in the strategic approaches to innovation promotion.** It should be noted that, in the middle of the efforts to establish a multi-level innovation policy where regions, cantons, functional regions and the federal state would play a complementary role, views of the companies, who are the key actors for innovation, are almost absent. Those actors which are closest to the field have a good knowledge of the daily concerns of companies, but do not have a complete vision of the challenges they face. And they might be biased in their proposals by self-interest and the need to secure funding sources for their own activities. The actors that are more far away from end beneficiaries do only have pre-conceived ideas on companies' needs but those are not based on reliable source of information, nor on feedback from companies. One of the critical success factors of the RIS Western Switzerland was that a large number of companies were systematically interviewed to understand their innovation sources, needs and potential. This objective source of information was then used as a reference to tailor the innovation support network: needs which were considered as both strategic and unmet by existing suppliers, were given priority.

159. **The deployment of properly run strategic exercises at supra-cantonal (functional region) level could help to tackle some of these governance problems.** Learning from foreign practices in Europe where regions are faced with similar challenges, is also a possible way forward (Box 27). Regional innovation promotion activities should be framed in a sound strategy and be professionalised, taking inspiration from good practice at home and elsewhere (Nauwelaers and Wintjes 2008). National and international benchmarking, exchanges of methods, establishment of robust monitoring and evaluation systems should be introduced without delay. Robust SWOT analysis of the regional innovation systems should be developed, with the help of independent experts. Setting targets, not only in the forms of input and output indicators, but also in terms of outcomes and, as far as possible, approximation of impact indicators, should become a standard practice (but indicators should not be standardised centrally!). Improving quality and effectiveness of innovation promotion actions paves the road towards cross-cantonal (functional regions) innovation policies: cantons will agree to pool resources when they get convinced that this provides good quality results.

160. Opportunities for learning and exchange across cantons and functional regions should be exploited further. This relates to many aspects of regional policy development, notably the diagnosis and support tools used for identifying SMEs needs for innovation. Several methods and models exist: IMPROVE project by ITZ in Central Switzerland, Platinn business model used by innovation coaches, www.innocheck.ch, benchmarking with Boston Massachussets done by i-net Basel, evaluation tool used by Creapole in collaboration with Neuchatel university, etc.

Box 27. Lessons from RIS and RITTS projects in Europe

The RIS (Regional Innovation Strategies) and RITTS (Regional Innovation and Technology Transfer Strategies) programmes were initiated by the European Commission in the mid-nineties to support the conception of strategic regional innovation policies. These programmes were frontrunners, at a time where innovation was barely considered as a legitimate policy area, and where the widest confusion concerning the borders of the concept itself was still prevailing in regional policy circles.

Even though the programmes were still developed in a rather linear fashion (with the idea that technology support services would need to match demands, both defined on a regional scale), they have been instrumental in introducing innovation as a new policy field, the idea of innovation as an interactive process, and in promoting more reflexive and inclusive policy-making processes. As a result, remarkable changes in perspective have been introduced in the regional policy portfolios. The somewhat revolutionary features of new instruments introduced in the wake of the RIS and RITTS are:

- Their conceptual background rests on the idea of interactive innovation;
- They focus on networks of actors and are system-oriented rather than individual actors-oriented. Here the numerous cases of introduction of clusters in the RIS-RITTS regions, illustrate this interactive approach to policy – making;
- They involve enhanced coordination and synergy between policy instruments, rather than single-goal and isolated tools;
- Their target and shape is informed by an understanding of SMEs needs, bottom-up defined, rather than centrally determined by managing agencies only. An example here is the introduction of a voucher scheme in Uusimaa (Finland), which stems from the acknowledgement of the need for an evolution towards more demand-led policy instruments;
- They include a behavioural additionality dimension: their aim is not only to provide sufficient financial resources, but also to influence behaviours and strategies towards more innovative ones. The Spiegel (i.e. Mirror) project in Limburg (The Netherlands), a support for innovation coaching in SMEs, illustrates a new orientation addressing the need for improving strategic thinking in SMEs, which was discovered as an important, non-technological bottleneck in the regional innovation system during the RITTS;
- They involve a dimension of learning in policy making: they rely on robust assessments of innovation needs and potential lessons are drawn from their implementation, and fed back into policy practice.

These various characteristics are indicating an evolution towards a “modern” innovation policy model, picturing a much broader and open view on innovation system that the prevailing R&D and technology policies at play in the regions before the RITTS and RIS exercises took place.

Source : Nauwelaers (2009)

3.3.3. Lift regional innovation policies to the inter-cantonal level and foster the cross-border dimension

161. **In the medium term, the functional region (inter-cantonal region) should become the locus for defining and implementing a regional innovation policy in Switzerland.** The launch of RIS-like exercises could help moving towards this target (including four elements: political commitment, evidence base, demand-led orientation and stakeholders involvement). One radical option would be to limit NRP funding in innovation to cross-cantonal initiatives: this is politically very sensitive but cannot be excluded after a transition period. A second-best option could be to increase the share of cross-cantonal funding in NRP (currently set at one-third) and take this criterion seriously to allocate federal money.

162. **The cross-border dimension of regional innovation policies should be given more prominence in regional actions,** taking examples from successful cases and introducing indicators of results and outcomes to demonstrate the value-added of the initiatives. To promote a cross-border dimension in innovation policy, innovation cheques might be further developed, allowing companies to redeem their cheques outside of the administrative borders, in line with a demand-led approach where companies remain free to decide where the best source of expertise lie. This small-scale instrument might provide a good pilot step in trying to alleviate the many barriers reported for cross-border innovation promotion. Making the KTT network evolve towards more open, cross-border structures is also an option to pursue in the medium term.

3.3.4 Extend the territorial definition for regional innovation policy under the NRP

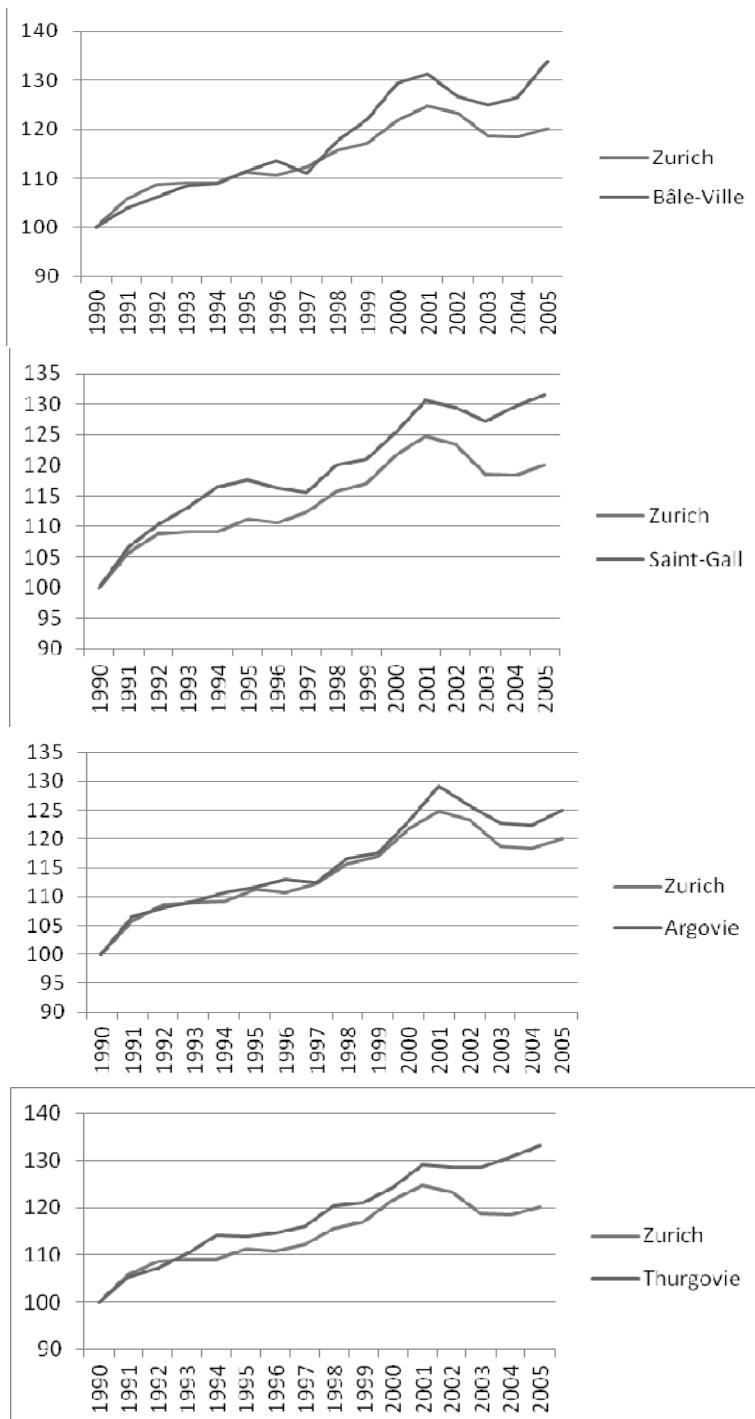
163. **The NRP should cover the entire Swiss territory and not exclude those places which are the motor of regional innovation.** As argued in Chapter 2, the territorial definition of the NRP, excluding agglomerations, is at odds with functional realities in Switzerland. It reinforces the view in some cantons that NRP equals fostering tourism and rural areas, rather than developing new economic opportunities. Cases were reported where a single policy had to be artificially formatted and cut in pieces to respond to the different funding sources: part of the actions in rural areas is to be funded by NRP, while the part touching on excluded areas would be funded by cantonal sources or CTI. The work of inno-BE for innovation promotion for example is funded by the canton of Bern, and there is additional money from SECO for those very small areas of the canton which are eligible for NRP. However support work is unified and it is cumbersome to distinguish between clients from eligible or non-eligible areas. Reporting on the two parts differ according to funding sources. This administrative complication could be easily avoided with an extension of eligibility for NRP to the whole territory. The experience with European Structural Funds points towards such a direction: the micro-zoning used in the past for regions in industrial decline (Objective 2 regions) has been abandoned to cover the whole European territory.

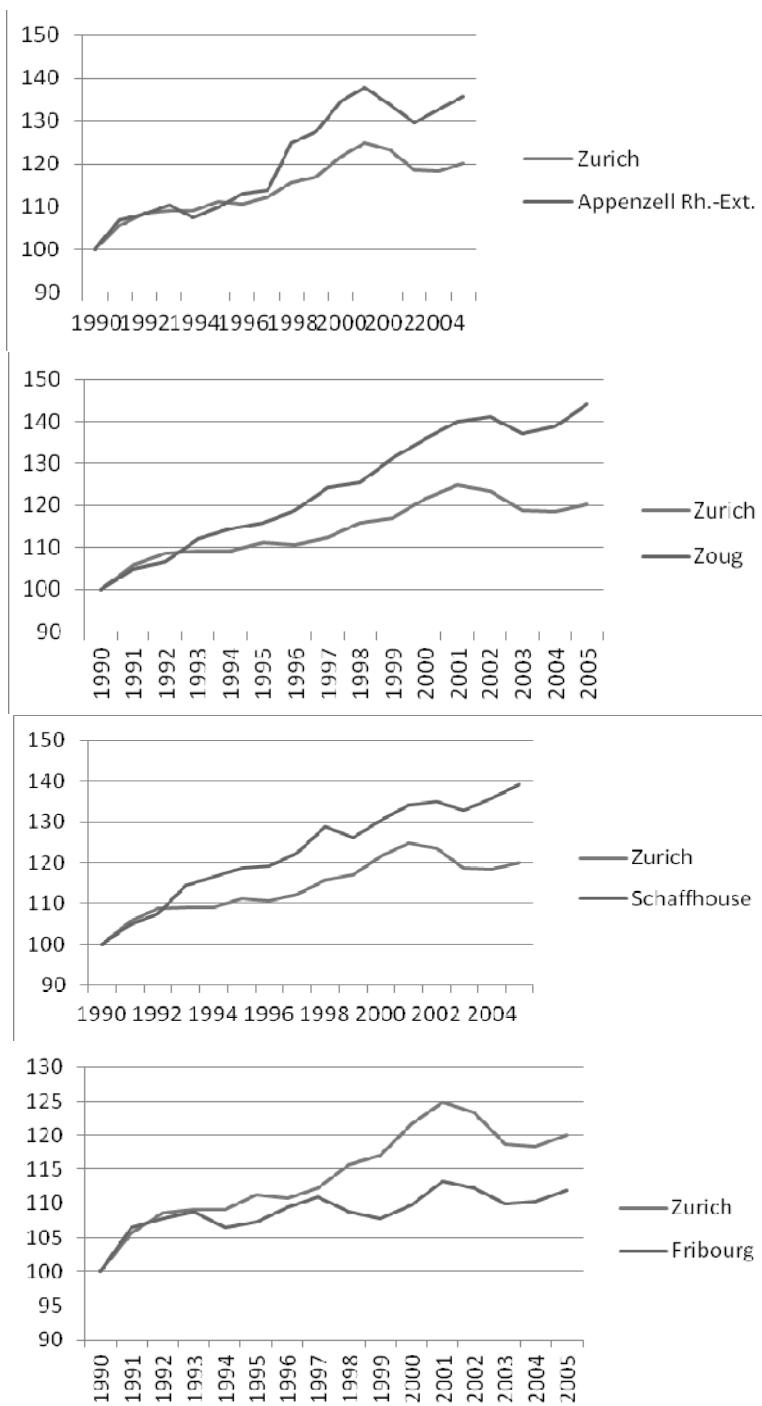
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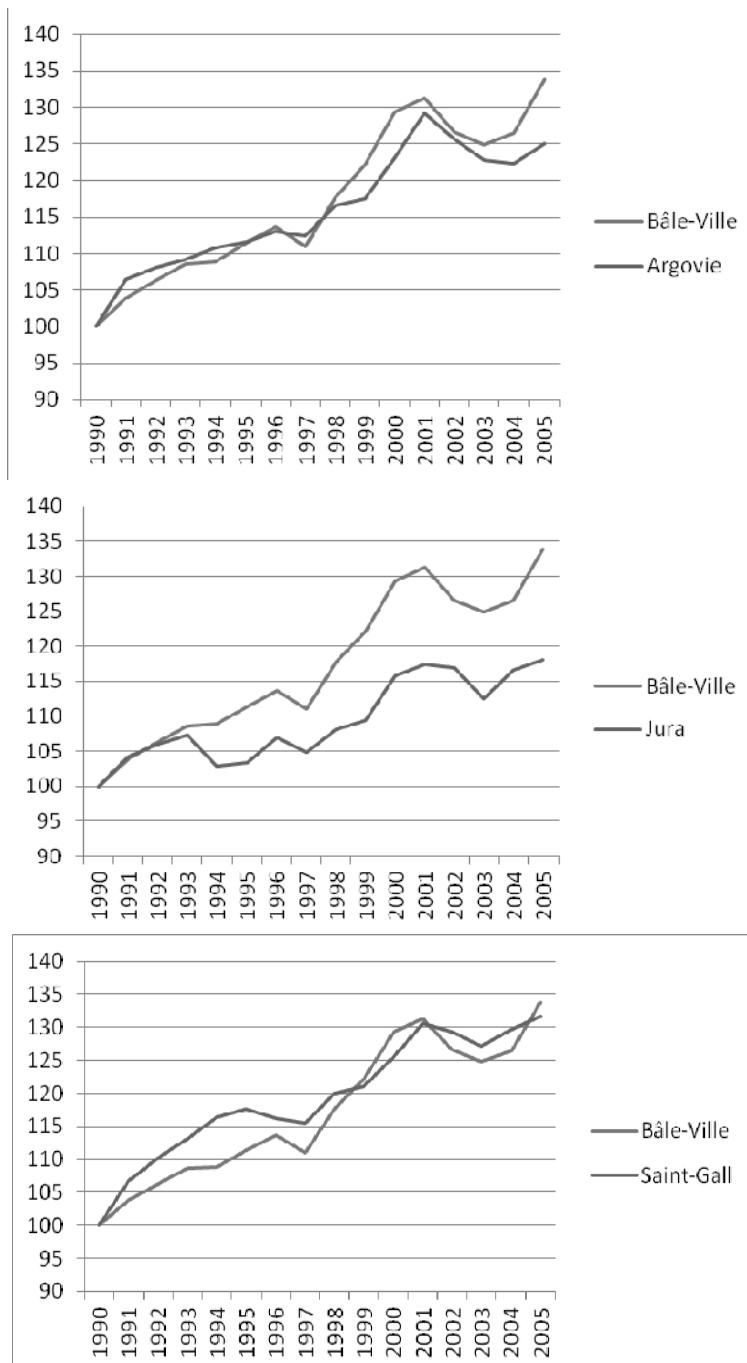
1. Message relatif au programme pluriannuel de la Confédération 2008 à 2015 concernant la mise en œuvre de la nouvelle politique régionale (NRP) et son financement, 28 February 2007, 07.025, free translation.
2. The assessment of crowding out effects rests on declarations of project promoters only, which is likely to lead to an underestimation of the phenomenon.
3. *www.regiosuisse.ch*
4. From Regiosuisse website.
5. *www.bioalps.org*
6. *www.micronarc.ch*
7. *www.alpict.ch*

ANNEX 1: DEVELOPMENT OF CANTONAL INCOME PER CAPITA 1990-2005 (1990 INDEX=100)

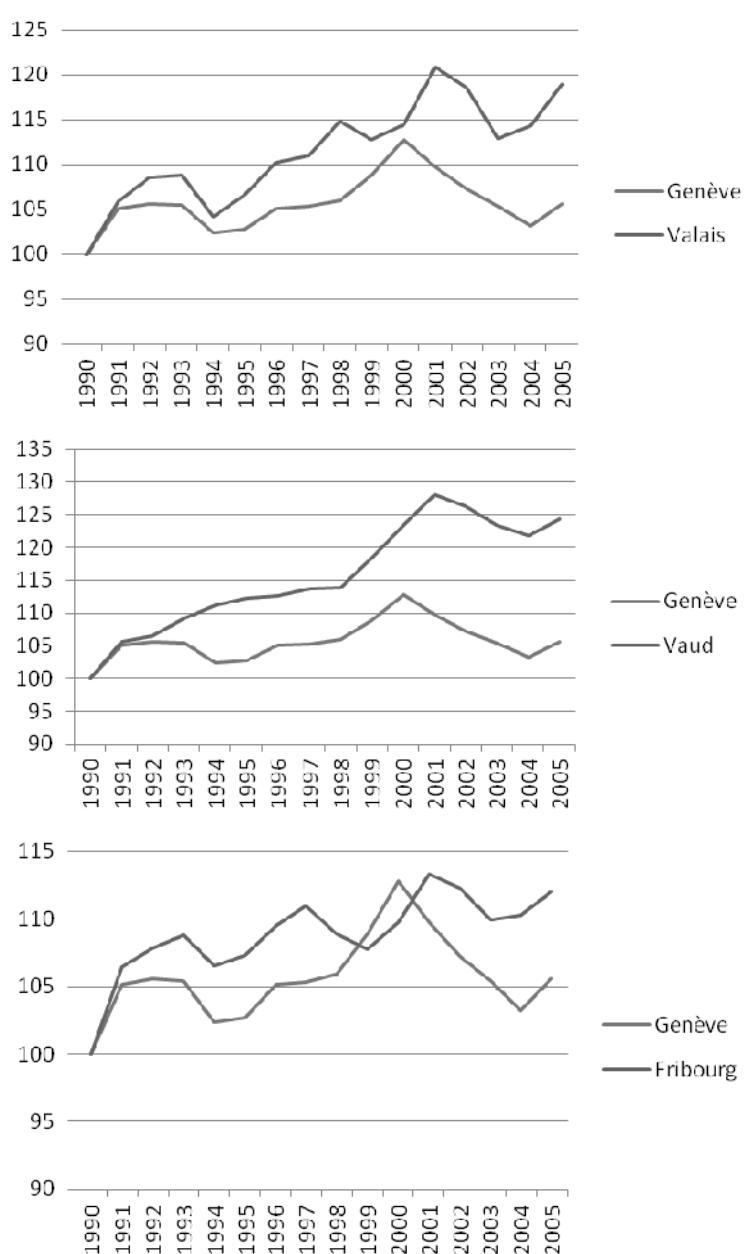
Zurich is strongly interlinked with:

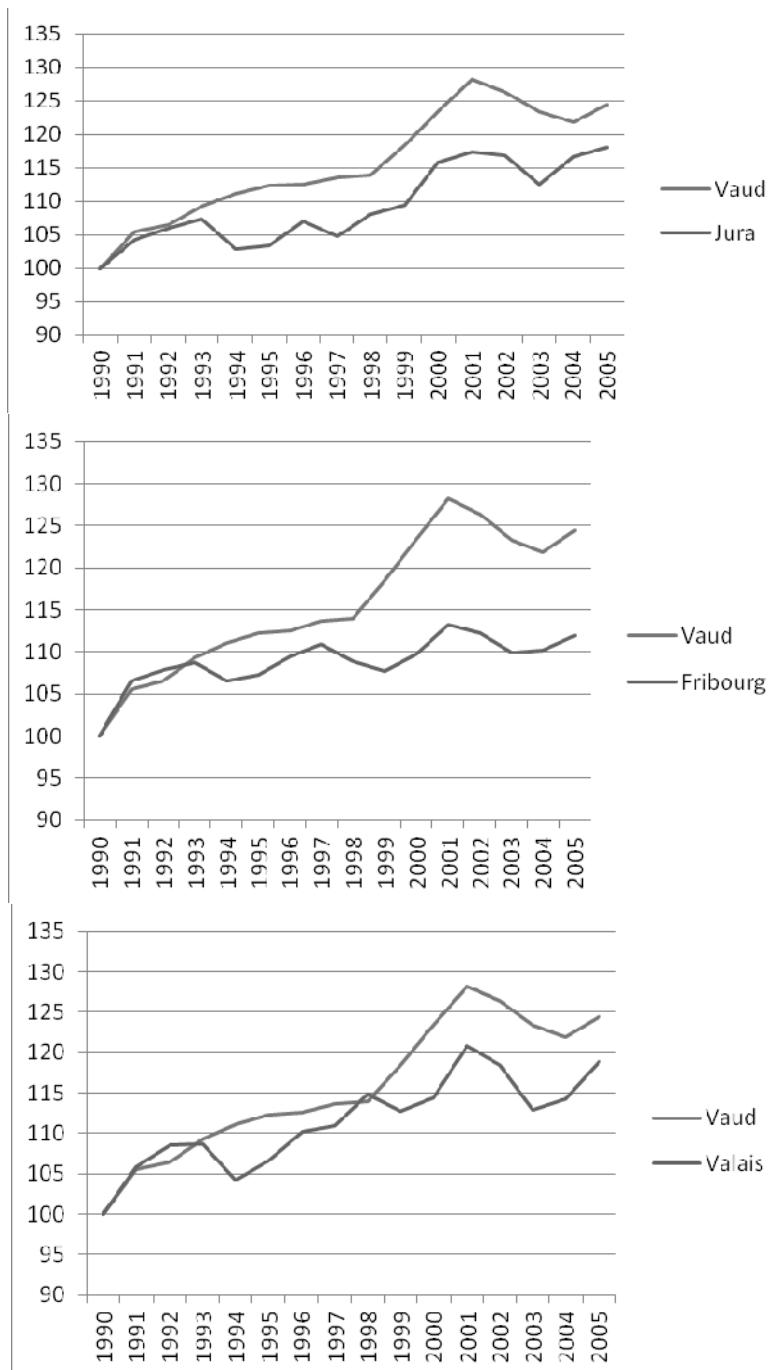


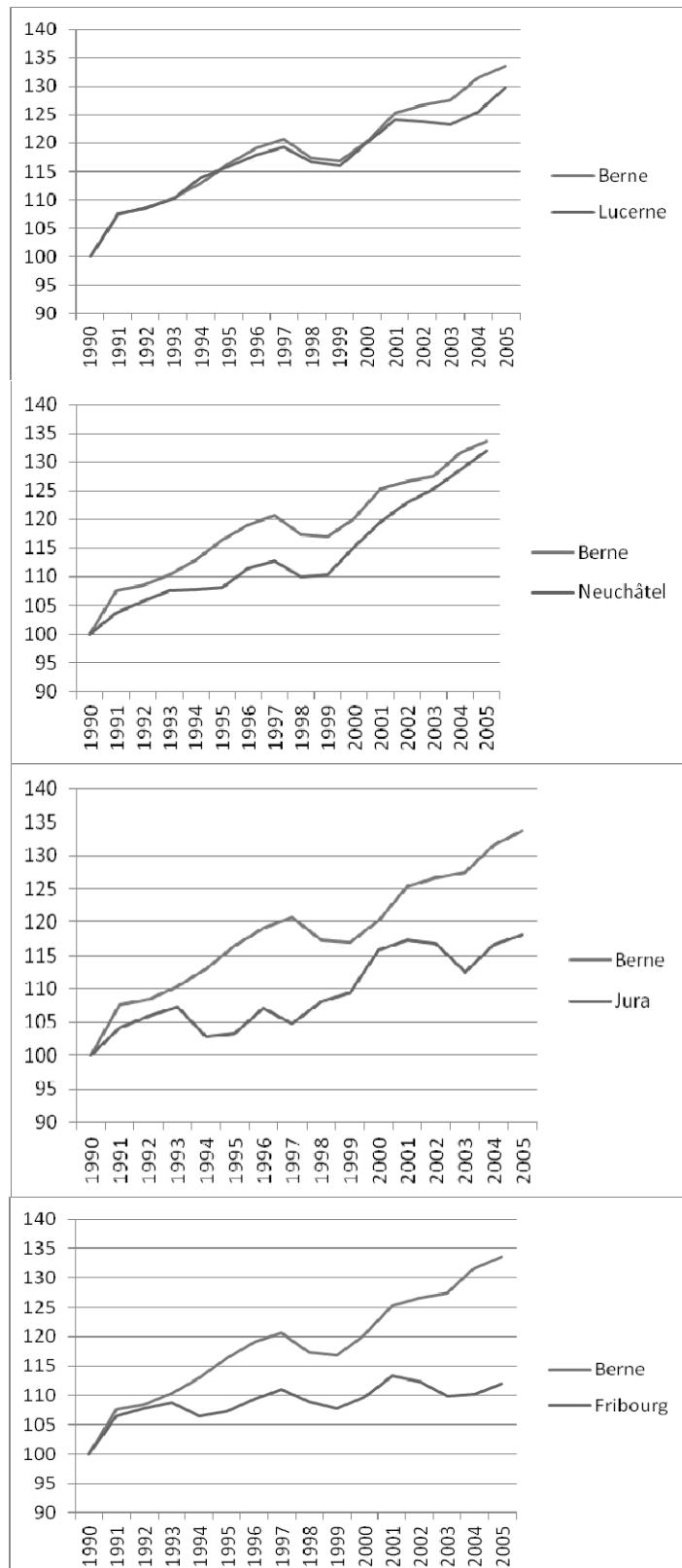


Basel is strongly interlinked with:

Geneva is strongly interlinked with:



Lausanne is strongly interlinked with:

Bern is strongly interlinked with:

ANNEX 2:

Table 14. Intercantonal concordats by canton, number of participants, and domain, 2003

Canton	No. of concordats	Number of participating cantons								Domain						
		2 to 6 cantons		7 to 13 cantons		14 to 20 cantons		21 to 26 cantons		Education, science, culture	Health, social security	Security, organisation of the state	Infrastructure, traffic, environment	Economy, agriculture	Public finances, taxes	Misc/ Unknown
AG	113	75	66.4 %	10	8.8%	7	6.2%	21	18.6 %	28	10	22	10	16	26	1
AI	67	32	47.8 %	12	17.9 %	3	4.5%	20	29.9 %	20	6	15	5	8	12	1
AR	95	58	61.1 %	13	13.7 %	6	6.3%	18	18.9 %	27	10	11	20	13	13	1
BE	142	95	66.9 %	21	14.8 %	5	3.5%	21	14.8 %	43	14	33	5	16	29	2
BL	161	126	78.3 %	8	5.0%	8	5.0%	19	11.8 %	40	22	36	19	18	24	2
BS	143	109	76.2 %	9	6.3%	6	4.2%	19	13.3 %	36	27	34	19	11	14	2
FR	93	47	50.5 %	20	21.5 %	5	5.4%	21	22.6 %	29	10	17	6	14	16	1
GE	60	25	41.7 %	14	23.3 %	3	5.0%	18	30.0 %	19	4	19	3	6	8	1
GL	84	40	47.6 %	16	19.0 %	7	8.3%	21	25.0 %	24	9	14	11	14	11	1
GR	67	27	40.3 %	12	17.9 %	7	10.4 %	21	31.3 %	23	7	14	3	7	13	0
JU	85	50	58.8 %	15	17.6 %	3	3.5%	17	20.0 %	33	14	19	3	6	9	1
LU	79	46	58.2 %	6	7.6%	7	8.9%	20	25.3 %	19	12	17	9	11	11	0
NE	94	51	54.3 %	19	20.2 %	5	5.3%	19	20.2 %	31	8	21	4	12	17	1

	GOV/TDPC(2010)5																
NW	86	55	64.0 %	7	8.1%	3	3.5%	21	24.4 %	26	14	20	11	13	2	0	
OW	85	52	61.2 %	7	8.2%	5	5.9%	21	24.7 %	26	15	19	11	9	5	0	
SG	218	174	79.8 %	17	7.8%	6	2.8%	21	9.6%	50	23	22	49	45	29	0	
SH	69	27	39.1 %	16	23.2 %	6	8.7%	20	29.0 %	21	9	14	6	8	11	0	
SO	119	82	68.9 %	9	7.6%	8	6.7%	20	16.8 %	23	15	31	7	22	20	1	
SZ	96	58	60.4 %	10	10.4 %	7	7.3%	21	21.9 %	31	8	17	22	14	4	0	
TG	114	71	62.3 %	15	13.2 %	8	7.0%	20	17.5 %	38	9	18	18	13	18	0	
TI	45	6	13.3 %	13	28.9 %	6	13.3 %	20	44.4 %	18	3	13	2	6	2	1	
UR	67	40	59.7 %	3	4.5%	5	7.5%	19	28.4 %	15	7	17	9	9	10	0	
VD	99	63	63.6 %	15	15.2 %	3	3.0%	18	18.2 %	26	7	20	10	12	23	1	
VS	64	29	45.3 %	14	21.9 %	2	3.1%	19	29.7 %	19	4	14	4	7	15	1	
ZG	68	33	48.5 %	7	10.3 %	7	10.3 %	21	30.9 %	19	5	15	4	10	15	0	
ZH	128	88	68.8 %	14	10.9 %	5	3.9%	21	16.4 %	28	8	21	27	13	30	1	
Total *	733	666	61.4 %	38	12.7 %	8	5.6%	21	20.3 %	159	81	110	113	98	167	5	
Median	89.5									28.0%	11.0%	20.2%	11.7%	13.1%	15.2%	0.7%	

Source: BADAC database of cantons and cities accessed February 2010 at http://www.badac.ch/FR/tableaux/cantons/index_all.html#circ

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