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THE FOUR CAPITALS MODEL IN THE EVALUATION OF THE REGIONAL DEVELOPMENT STRATEGY – THE EXAMPLE OF THE LUBUSKIE VOIVODESHIP¹

The article shows how the Four Capitals Model was applied to evaluate the region development strategy document and its implementation in terms of sustainable development. Firstly, it defines these types of capitals that could be used to analyse the sustainability of regional development. Then the authors describe the results of the exercise carried out together with representatives of the regional authorities, intended to assess the impact of the strategy implementation in the context of the four capitals. The results were confronted with the opinions of local governments and SME owners. This helped to identify the weaknesses of the strategy and potential trade-offs between different types of capital. Finally, the recommendations related to the updating of the strategy were formulated.

1. The Four Capitals Model and sustainable development

In contemporary economic theory, it is assumed that capital is a value that has been accumulated to date, in a variety of forms, and which, when properly used in economic processes, can produce new value, ingrained in products and services (Wilkin 2003, p. 18). It can be said therefore that the essence of capital is that it serves to generate new goods (which can also be used to generate other new goods, and as such can also represent capital themselves). In the narrowest sense, capital means financial resources (assets). Classical economic theory considered capital thus understood as one of the three production factors (with land and labour as the other two). As social and economic sciences developed, concepts of other forms of capital emerged, e.g. human, intellectual, social, cultural, trust, organisational capital; all these types of capital emphasise the significance of soft, qualitative factors for economic development. Currently, the role of non-material forms of capital, such as brand, know-how or goodwill is increasingly gaining in importance.

An attempt at synthesising the inquiries into different forms of capital was made by Paul Ekins (1992) in his **Four Capitals Model**. In addition, Serageldin and Steer in their World Bank report (1994, pp. 30–31) wrote about the need

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to distinguish at least four kinds of capital. Generally speaking, this model is founded on the conviction that the four kinds of capital: natural, manufactured (produced assets), social and human (see Table 1) play a significant role in the process of generating wealth and prosperity.

Table 1. Types of capital

Manufactured capital

Manufactured (human-made) capital comprises all assets which are traditionally considered as capital (produced assets which are used to produce other goods and services). Some examples are machines, tools, buildings and infrastructure.

Natural capital

It covers all forms of the ecosystem and natural resources which help create social welfare. In addition to traditional natural resources (such as timber, water, energy and mineral reserves), it includes natural assets that are not easily valued monetarily, such as biodiversity or the ecosystems which perform ecological services (e.g. air and water filtration).

Human capital

Human capital generally refers to the health, well-being and productive potential of individual people. Types of human capital include mental and physical health, education, motivation and work skills. These elements not only contribute to a happy, healthy society, but also improve the opportunities for economic development through a productive workforce.

Social capital

Social capital consists of the social networks based on trust and formal and informal rules which facilitate individual or group access to resources. Like human capital, it is related to human well-being, but on a societal rather than individual level. Social capital refers to those stocks of social trust, norms and networks that people can draw upon to solve common problems and create social cohesion. Examples of social capital include neighbourhood associations, civic organisations and co-operatives. The political and legal structures which promote political stability, democracy, government efficiency, and social justice (all of which are good for productivity as well as being desirable in themselves) are also part of social capital.

Source: Dahlstrom, Ekins, 2005.

The World Bank report entitled: *Monitoring Environmental Progress* (World Bank 1995), proposes to assess the sources of the global wealth in the context of three types of capital (natural, manufactured and human – with the latter comprising the social and human capital within the meaning ascribed to them in the Four Capitals Model). According to this source, 20% of the global wealth is represented by natural capital, 16% – by manufactured capital, while the remaining 64% – by human capital (human resources). As we can see from this example, people and their skills represent the principal resource and the foundation of the economy.

The Four Capitals Model used to explain sustainable development² assumes that development (understood as satisfying human needs and aspirations) is possible owing to diverse services provided by the human, manufactured, social and natural capital. Satisfying human needs and improving the quality of life can be perceived as an increase of general welfare or utility (through consumption, satisfactory work, good health, satisfactory interpersonal relationships, well-performing public institutions and guaranteed access to the full range of resources and services offered by the natural environment). To ensure sustainability of development, the capital resources which help fulfil human needs and improve the living standards must be maintained at a stable level or be increased over time.

In this context, the question should be asked at what level the capital resources should be maintained; and whether and to what extent we can replace a given type of capital with another. Are some capital components irreplaceable? In answering this question, we can say that it is possible to replace capitals, albeit only on a limited scale. For instance, replacing natural capital with manufactured capital is restrained by such features of the natural environment as non-recoverability or the existence of 'critical' components of natural capital (such as an appropriate oxygen level in the atmosphere) whose role in the generation of wealth is unique. With respect to the replaceability of capitals, we can distinguish two concepts of the sustainability of development: that of strong sustainability and that of weak sustainability. According to the former concept, man's activity should not lead to any depletion of the natural capital, whereas the other propounds that the only requirement is to maintain the total balance of the capitals. In other words, depleting the natural capital is consistent with the theory of weak development sustainability as long as the depletion is set off by the accumulation of the remaining types of capital (Żylicz 2004, p. 197). Serageldin and Steer (1994, p. 32) offer a more detailed categorisation of sustainability: weak, sensible, strong and absurdly strong. The first envisages an unlimited replaceability of capitals; in the second, this process is restrained by certain thresholds, which, when crossed, make replaceability impossible; the third claims that different types of capital are absolutely irreplaceable, while the fourth appeals for not using up the non-recoverable resources.

One advantage of the Four Capitals Model is that it helps to identify cases when there is a trade-off between the development of particular kinds of capital (for instance, the development of large-scale agricultural production can lead to a deteriorated condition of the natural environment). For this reason, the pa-

² The Law on Environmental Protection defines sustainable development as socioeconomic development which integrates political, economic and social activities while maintaining an equilibrium in the natural environment in order to ensure the possibility for satisfying the basic needs of individual communities or citizens of the present and future generations (Law on Environmental Protection Act of 2001, Art. 3 (50)). However, the literature of the subject knows a simpler definition which says that sustainable development is satisfying today's needs in a way that does not restrict the possibility for future generations to satisfy their needs (Żylicz, 2004, p. 197).

per further discusses the application of the Four Capitals Model to assess the sustainability of development and regional development strategies. This will be done using the example of the Lubuskie province (*województwo* – voivodeship), which was chosen for this exercise for a number of reasons. Firstly, this is a region with high environmental quality, despite a considerable degree of anthropogenic transformation of the natural environment. At the same time, the voivodeship forms an important part of Poland's economic system, owing to its many linkages with the EU countries. Whether the region will make use of its development opportunities depends on such issues as fast development of the technical infrastructure and closing the gaps in the development levels and standards of living between the two sides of the border. In this context, the question remains open on the impact of the region's development capital on the remaining kinds of capital. Secondly, the regional authorities are distinguished for their commitment to the region's development (Lubuskie was the first to adopt a regional strategy document), a pragmatic approach and considerable openness to new programming methodologies and management techniques, which is proven by the best-prepared voivodeship development strategy (cf. Gorzelak, Jałowicki 2001).

2. The Lubuskie Voivodeship – evaluation of the current status of the four capitals

The Lubuskie voivodeship is situated in the central-western part of Poland, in the belt close to the German border. With an area of 13,984 km², it is one of the country's smallest voivodeships (4.5% of the country's total area). Lubuskie is also one of the least populated regions of Poland (1,024,000) and has one of the lowest population density figures (73 inhabitants per km²). The region has two cities performing the function of regional capitals: Gorzów Wielkopolski (population 126,300) is the seat of the state regional administration, while Zielona Góra (population 119,200) is the seat of the regional government. Lubuskie plays an important role in Poland's economic links with the remaining European Union countries, with its 8 large road border crossings and 4 railway crossings, which account for over 80% of the total cargo traffic in the central and eastern directions – towards the country's central regions and the eastern border.

In terms of GDP per capita (PLN 17,850, i.e. approx. EUR 4,450), the voivodeship is ranked below the national average (87.4%), and far below the EU average (33%). The region's economy is dominated by the service sector, with such market services as trade and repairs, transport, warehousing and communication. As regards the industrial potential, the voivodeship ranks among the averagely industrialised ones. Industry, which until recently performed a core development function, underwent a deep restructuring process owing to privatisation and inflow of foreign capital, mainly from Germany. The sectoral structure of industry is relatively highly diversified, with the timber, furniture and paper industries as the main sectors, based on the region's natural resources. More

than a half of the region's businesses are small entities, employing up to 5 staff, which can be regarded as a proof of robust entrepreneurial spirit among the regional population. Most start-up companies are opened in such sectors as financial brokerage, real estate and B2B services, as well as health care. The average employment in a private enterprise is 2.5 people (as compared to 7–8 in the European Union). Agriculture in the Lubuskie voivodeship is characterised by the lowest share of farmland in the total area (about 40%) and a low share of private farms, which occupy only 61% of agricultural land. In private farms, the average farmland area is 9.8 ha, and is 50% higher than the country's average, which indirectly points to the prevalence of large-area farming. In foreign trade (both import and export), Germany is the main economic partner of the region; nearly 70% of goods and services are directed there.

The voivodeship's urbanisation rate is similar to the national average, with approximately 65% residents living in cities. At the same time, Lubuskie, as opposed to the neighbouring regions and the country at large, has a relatively high percentage of pre-working age population, and a low percentage of post-working age population. The quality of human capital in the voivodeship is relatively low, which is manifested by a low share of the population with higher education – 6.9%, as compared to the national average of 8.4%. What is more, the gap between the region and the other voivodeships will be probably increasing owing to a relatively low number of students – only 333 per 10,000 population, with the national average being more than twice as high.

The residents of the Lubuskie voivodeship are descendants of people who came here from different parts of Poland following World War II. On the one hand, this led to the mingling of various traditions, and on the other – to the evolution of a rather homogeneous community. Maybe this is the reason why the region is characterised by a high degree of social mobilisation, demonstrated by the involvement of the local communities in the life of their municipalities (*gmina*). In addition to that, after many years of mutual antipathy, Polish-German relations are currently booming. In Lubuskie, two Euroregions operate, 'Spree–Neisse–Bóbr' and 'Pro Europa Viadrina', which launch many different initiatives aimed to bring together the communities living on both sides of the border. Moreover, Frankfurt – Słubice (a twin city) is the seat of the joint Polish-German Viadrina University. At the same time, the proximity of the border to some extent provokes pathological behaviours, such as organised and petty crime, or asocial ones, such as the flourishing 'black economy'.

The Lubuskie voivodeship has the highest percentage of forests in the country – 49%, as compared to the national average of 29%; these forests represent 7.5% of all woodland in the country. More than one third of the voivodeship's area is occupied by areas protected under law as ones with particularly valuable natural assets. There are 48 reserves, with a total area of 6,240 ha, 7 landscape parks and numerous protected landscape areas. In addition to that, there are nearly 600 lakes in Lubuskie, most of them lying in the central part of the region, between Międzyrzecz and Świebodzin.

Table 2. Capitals' stock of the Lubuskie voivodeship as compared with Poland and the EU

Stock of capital	Very poor	Poor	Average	Good	Very good
Manufactured	EU		PL		
Human	EU		PL		
Social	EU		PL		
Natural	PL			EU	

Source: prepared by the authors.

When we compare, in a simplified way, the state of the individual types of capital in the Lubuskie voivodeship to the average condition of the four capitals' stock in Poland and the European Union (Table 2), we will notice that the region has a distinct deficiency of manufactured and human capital, especially when we compare it with other European Union countries. Apart from a low GDP level as compared to the EU average, the region still suffers from an acute shortage of technical and municipal infrastructure. There is a similar situation as regards social capital, the quality of which is lower than its average quality both in Poland and the EU. Conversely, the condition and the quality of the natural capital can be regarded as good or even very good as compared with the national and EU average, which is mainly due to a high share of woodland and a low population density in the region.

The position that the voivodeship currently occupies is to a great extent the result of an earlier development model. It should be observed that before 1989, in the centrally planned, capital-intensive socialist economy, the development goals were mainly oriented at the production of investment assets, needed for the development of large industrial plants (in Lubuskie, chemical, plastics, paper plants and clothing factories). At the same time, fulfilling consumer needs was of secondary importance, which was manifested by the chronic shortages of basic consumer goods. Economic effectiveness was low, also with regard to rational utilisation of the natural assets: excessive quantities of raw materials and energy were used, there prevailed a carefree approach to the volume of generated waste. Environmental protection investments would as a rule lose in the competition for funds with industry, particularly heavy industry.

The changes begun after 1989 and the building of a market economy led to increased productivity and effectiveness across the country, including reduced consumption of energy and raw materials. In consequence, the condition of the natural environment was quickly improved, mainly as a result of the collapse or restructuring of large state-owned enterprises (even though there still exist

areas of ecological threats). In addition to that, the abandonment of the former development model made it possible to programme the country's and the regions' development in a way that takes into account the principles of sustainable development. Currently, the development goals reflect the societal needs, while aspirations and efforts to increase productivity and effectiveness of economic activity have so far had an overall positive influence on social and natural capital.

3. Evaluation of the development goals of the Lubuskie voivodeship

The development goals are laid down in the *Development Strategy for the Lubuskie Voivodeship*, a document prepared by the Marshal's Office and adopted in the form of a resolution by the Sejmik of the Lubuskie voivodeship in March 2000.³ The Strategy identifies the following main development goals for the region (translated into operational objectives):

- **to ensure spatial, economic and social cohesion of the region** (for example, through developing an efficient transport system; using the existing conditions to develop air transport; upgrading and development of the technical, municipal and social infrastructure);
- **to improve the level of education of the society and increase the innovative potential of science and economy** (for example, through improving the standards of education at the post-lower secondary and tertiary levels; adapting curricula to the labour market needs and situations resulting from EU integration processes; equalising educational opportunities of children and youth, strengthening and stabilising academic and research staff; developing the research facilities of higher education institutions in the region; setting up the Lubusz University; strengthening the network of higher education institutions);
- **to develop enterprise** (for example, through active economic promotion and finding investors; setting up a regional system supporting innovation and technology transfer; developing an institutional and capital business environment, non-agricultural development of rural areas, restructuring and reorientation of market-oriented farms and food processing plants);
- **to effectively use the natural and cultural resources:** (raising environmental awareness; using the natural and cultural heritage assets for the development of tourism; effective promotion of tourist assets and tourist information systems; developing cultural, health and sport services for the regions' residents and foreign guests).

The regional development strategy was elaborated on the initiative of the Lubuskie Voivodeship Board. The work on the Strategy was preceded by

³ On 19 December 2005, the Regional Assembly (*Sejmik Województwa Lubuskiego*) approved the updated *Strategy* until 2020. A workshop organised as part of the SRDTOOLS project was used to provide input for the updating exercise (see 3.1. below).

a three-day workshop for a large group of representatives of local governments, government administration, professional and academic associations. Also, consultations were held among the key stakeholders with an interest in the socio-economic directions of regional development. Meetings were organised in all the districts (*powiaty*), and the local authorities, the Lubuskie Voivode, the councillors of the Sejmik and representatives of other institutions and regional organisations voiced many comments, proposals and ideas. In addition to that, opinions of regional and sectoral experts were obtained. The *Strategy* was drafted by a team supervised by experts, and incorporated the results of the consultations.

3.1. Workshops on the updating of the *Strategy*

The operational objectives could be positioned using the Four Capitals Model. To do this, an exercise was carried out with the participation of the representatives of different departments of the Marshal's Office to define the impacts of tasks implemented as part of a given operational objective on a specific type of capital. The impacts were assessed using the following categories: negative, no impact, positive, very positive. In addition, a distinction was made between the potential, that is, intended impact, and the actual impact in the last four years. Furthermore, if the direction of the undertaken activities was considered undesirable or if their discontinuation could produce negative consequences for a given type of capital in the future, the category of 'warning' was introduced, and relevant fields were marked accordingly.


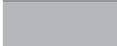
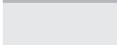

Based on an analysis of operational objectives (see Annex), it can be observed that the strategy comprises – though to varying extents – all the four capitals. At the same time, no operational goal was identified the achievement of which could have an unambiguously negative effect on any of the four capitals. According to the regional authorities, four years after the strategy was adopted, about 60% of the goals were at least partly fulfilled. Furthermore, individual operational objectives had a concurrent impact on different types of capital, which can be seen as a proof of an integrated approach to their identification (which, in turn, can be regarded as being consistent with the principles of sustainable development). In relatively few aspects, representatives of the regional authorities feared the negative consequences of attaining the adopted goals. This was mainly associated with the failure to undertake the required actions at a suitable time (primarily with regard to activities related to the development of manufactured and human capital). According to the opinions voiced by the representatives of the regional authorities, one example of threats related to pursuing the adopted goals could be provided for social and natural capitals.

An evaluation of the strategy indicates the objectives which were ascribed more significance at the operational level, and those whose implementation proceeded the most smoothly over the past five years. Based on the analysis, it can be concluded that the regional authorities pay most attention to economic issues,

including the development of manufactured capital. It seems that the remaining objectives were subordinated to the growth of effectiveness and productivity of the economy; they are mainly aimed to ensure the development of human capital, and – although to a lesser extent – of social and natural capital. At its simplest, it can be said that in the case of Lubuskie, where the level of economic development is low, economic growth can exert a positive influence on the improvement of the stock of the other three capitals through improving the level of the residents' education, SME development and raising environmental awareness. As regards the implementation aspect, tasks related to the development of manufactured and human capital are performed most satisfactorily of all, unlike those related to social capital, whose implementation is the least advanced. In the opinion of the local authorities, the significance attached to the different objectives corresponded to the actual needs of the region. These needs, in turn, reflect the position the voivodeship has in both Polish and European context.

Table 3. Potential impact of strategic objectives on different capitals

	Manufactured	Human	Social	Natural
Objective 1	Strong (3 points)	Average (2 points)	Weak (1 point)	None (0 points)
Objective 2	Strong (3 points)	Strong (3 points)	Weak (1 point)	None (0 points)
Objective 3	Strong (3 points)	Average (2 points)	Average (2 points)	Weak (1 point)
Objective 4	Weak (1 point)	Weak (1 point)	Weak (1 point)	Strong (3 points)
Total	10	9	7	4

	Strong (3 points)
	Average (2 points)
	Weak (1 point)
	None (0 points)

Source: prepared by the authors.

3.2. Opinions of local authorities and enterprises

The *Strategy* is a document prepared by the Voivodeship Board, but also a product of a political process and consensus reached between the councillors – representatives of different political parties, and an effect of consultations among different political groups as well as advice of external experts.

Empirical research⁴ shows that the degree of familiarity with the *Strategy* among entrepreneurs and local authorities was rather varied. Only 15% entrepreneurs declared that they were familiar with the document. On the other hand,

⁴ In the third quarter of 2005, questionnaire surveys were conducted among 106 SMEs from five *gminas* located in the Lubuskie voivodeship (Gorzów Wielkopolski, Słubice, Sulęcín, Torzym, Zielona Góra). Also, questionnaires with a similar set of questions were sent out to the

nearly all representatives of local authorities had knowledge about the strategic objectives (93%). The respondents agreed that the four strategic objectives reflected the developmental needs of the voivodeship. There was a difference of opinion as regards the evaluation of the extent to which these objectives had been attained, while the respondents positively evaluated the implementation of the objective related to the improvement of educational attainment and innovative potential. The implementation of tasks related to the development of enterprise and effective use of the environmental assets was evaluated as mediocre (with slightly lower ratings from the entrepreneurs). The main point of difference was the evaluation of the increase of spatial, economic and social cohesion of the region, which – in the entrepreneurs’ opinion – was achieved only to a minimal degree. On the other hand, the local authorities were of the opinion that the results achieved in this sphere were similar to those related to the development of human capital. According to the respondents, all these objectives should be continued, particularly the development of enterprise.

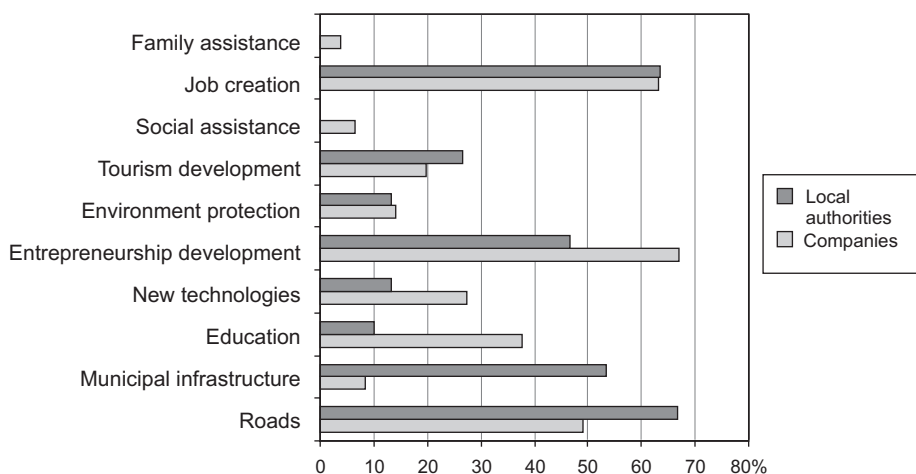


Fig. 1. Key development objectives according to local authorities and entrepreneurs
Source: prepared by the authors

When given the choice to select the objectives which were of cardinal importance to the region’s development, the entrepreneurs, quite naturally, opted for the development of enterprise. On the other hand, the representatives of the *gmina* authorities most frequently pointed to the development of transport infrastructure. Both groups were of the opinion that the objective related to the creation of new jobs was next in importance, followed by the development of municipal infrastructure in the opinion of the *gmina* authorities, with develop-

local authorities in all 83 *gminas* of the voivodeship. 30 completed questionnaires were sent in, which meant a response rate of approximately 36%.

ment of tourism regarded by them as more important than the development of new technologies and education. On the other hand, the entrepreneurs were rather in favour of the latter two objectives. Quite surprisingly, they were more willing to pursue objectives of a social nature, related to helping the poor and their families. These objectives were not indicated by the representatives of *gmina* authorities, which could be a sign of their bad experiences relating to the effectiveness of public assistance and of its ineffective targeting. Environmental protection as one of the major development objectives was far behind the other objectives, indicated by slightly more than 10% of the respondents.

At the same time, the respondents expressed a great deal of acceptance for the principles of sustainable development (cf. Parteka 1997). This was manifested by their selection of the six proposed options worded as follows (in brackets – responses of the entrepreneurs and the *gmina* authorities, respectively):

- high penalties should be imposed for environmental pollution, even if this meant bankruptcy of large plants polluting the environment (73%, 65%);
- roads should be built more slowly and at a higher cost, to minimise adverse effect on the environment (83%, 86%);
- it is better to build a longer road and at a higher cost to protect a habitat of an endangered bird species than *vice versa* (89%, 66%);
- companies introducing new technologies should be supported, while bankruptcies of unprofitable enterprises should not be prevented (90%, 93%).

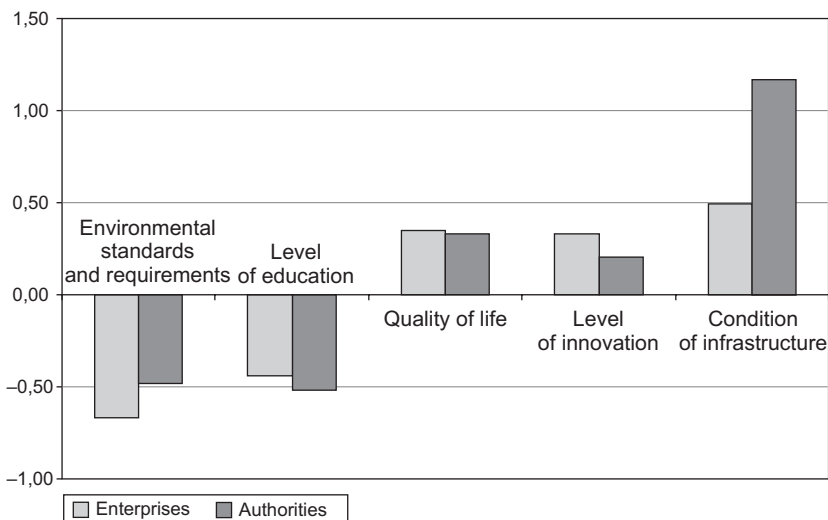


Fig. 2. Factors impeding the voivodeship's development (with regard to equivalent opinions – above OX axis – an impeding factor, below OX axis – a given factor is not considered a barrier) [on the 1 to 3 scale]

Source: prepared by the authors.

There was a difference of opinion regarding new investments which create new jobs but are harmful to the environment. About a half of the respondents believed that in the future, thanks to new technologies, it would be possible to bring the environment back to its original state, while a half did not consent to even a temporary deterioration of the condition of the environment. Furthermore, nearly all the respondents did not object to importing materials needed for industrial production from outside the region in the event the local reserves were exhausted.

As regards developmental barriers, the key such barrier for the respondents was the poor condition of the transport infrastructure, which was particularly strongly emphasised by the *gmina* authorities. Another impediment to the region's development was a low quality of life of its residents and a low level of innovation. On the other hand, the respondents did not consider environmental protection standards as barriers to the region's development, similarly to the level of education, which in this context was regarded as sufficiently high.

Tab. 4. Trade-offs between pairs of objectives / phenomena

	Entrepreneurs		Difficult to say	<i>Gmina</i> authorities		
	Yes	No		Yes	No	Difficult to say
Environmental protection and construction of roads	21%	58%	21%	17%	76%	7%
Environmental protection and urban development	11%	70%	18%	14%	66%	21%
Environmental protection and mass tourism	15%	66%	19%	14%	55%	31%
Environmental protection and motorisation	40%	42%	17%	39%	29%	32%
Environmental protection and large-scale agricultural production	12%	56%	31%	24%	52%	24%
Increasing wealth of the society and increasing social inequalities	47%	29%	25%	57%	17%	27%
Inflow of foreigners and local population	6%	76%	18%	0%	90%	10%

Source: prepared by the author, based on the research findings.

The entrepreneurs and *gmina* authorities were also asked whether they saw any trade-offs between a number of different objectives or phenomena. An analysis of their answers indicates that in the respondents' opinion, the most glaring trade-off existed between increase in society's wealth and increase of social inequalities, and between development of motorisation and environmental protection. The remaining trade-offs were not as obvious, and were perceived only by some entrepreneurs and representatives of *gmina* authorities. They mainly pertained to the conflict between large-area, intensive agricultural production

and environmental protection, and (only in the opinion of the entrepreneurs) between construction of roads and environmental protection. Only some concerns were expressed regarding the impact of urban development (suburbanisation) and mass tourism on the condition of the natural environment. On the other hand, the influx of foreigners did not give rise to practically any controversy, which was most probably due to a minimal scale of this phenomenon.

4. Conclusions and recommendations

When we evaluate the status of the specific capitals in the Lubuskie voivodeship, we will notice that the region has a distinct deficiency of manufactured and human capital, while the level of natural capital can be regarded at least as good. This is probably one of the reasons why the regional authorities focus mainly on the development of manufactured capital: because economic growth can exert a positive influence on the stock of the other capitals by improving the level of the residents' education, stimulating the growth of SMEs and raising environmental awareness.

As regards implementation, tasks related to the development of manufactured and human capital are performed most efficiently, while those related to social capital do not meet the expectations. On the other hand, the environmental protection objectives are not perceived as particularly important. This view is also shared by the local authorities and businesspeople. This is not a result of a low environmental awareness, which in fact happens to be quite high both among the entrepreneurs as well as among the representatives of the local authorities. The respondents were ready to incur additional costs related to environmental protection and bio-diversity (however, there were controversies around big polluters that are harmful to the environment, yet at the same time, provide employment to a large number of local people). Moreover, the assessment of operational objectives within the development strategy leads to the conclusion that the implementation of the majority of tasks will have a positive or neutral impact on natural capital. However, among conflicts emerging in the region, one can point out the trade-off between large-scale agricultural production, food-processing industry (especially meat processing) and environmental quality. This is a rather marginal issue in comparison with the view shared by a majority of the respondents that the increase of people's affluence leads to increased social inequalities.

Based on the workshops and additional survey performed among representatives of local (*gmina*) authorities and business, one can see the need for a revised strategy which would place more emphasis on the following, coupled with more efficient implementation of tasks relating to:

- the development and implementation of a support system for businesses to help innovation and technology transfer;
- upgrading of the transport system while observing environmental requirements and improvement of alternative forms of road transport;

- ensuring equal access to education for children and youth and general improvement of the quality of the system;
- the diversification of business activity in rural areas, including the development of organic farming and reorientation of monoculture farming complexes in the agriculture sector;
- the revitalisation and strengthening of urban centres to minimise the adverse impact of suburbanisation processes.

Sustainable development of the region seems to depend on the successful implementation of the above objectives, and these should be incorporated in the 2007–2013 regional operational programme.

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Objective	Operational objective		Manufactured capital		Human capital		Social capital		Natural capital		
	Po- tential	Actual	Warn- ing	Po- tential	Actual	Warn- ing	Po- tential	Actual	Poten- tial	Actual	Warn- ing
To ensure spatial, economic and social cohesion of the region	Developing an efficient transport system	+	-	+	+		+	+	+	+	
	Using the existing conditions to develop air transport	++	+		+		+	+	+	+	
	Upgrading and development of the technical, municipal and social infrastructure	++	+		++	+		+	++	++	
	Broad cross-border and interregional cooperation	++	+		+	+		+	+	+	
	Developing a high capacity for the absorption of EU funds	+	+		++	++		+	+	+	
To improve the level of education of the society and increase the innovative potential of science and economy	Improving the standards of education at the post-lower secondary and tertiary levels	++	+		++	++		++	+	+	
	Adapting curricula to the labour market needs and situations resulting from EU integration processes	++	+	-	++	+		+	+	+	
	Equalising educational opportunities of children and youth	+	+		++	+	-	++	+	+	
	Strengthening and stabilising academic and research staff, developing the research facilities of higher education institutions in the region	++	+		+	+		+	+	+	
	Setting up the Lubusz University and strengthening the network of higher education institutions	+	+		++	++		+	+	+	

Objective	Operational objective		Manufactured capital		Human capital		Social capital		Natural capital	
	Potential	Warning	Potential	Warning	Potential	Warning	Potential	Warning	Potential	Warning
To develop enterprise										
Active economic promotion and finding investors	++	-	+		+		+		.	
Setting up a regional system supporting innovation and technology transfer	++	-	.		++		+		.	
Development of institutional and capital business environment	++		++		++		++		.	
Non-agricultural development of rural areas	+	-	.		+		+		+	
Restructuring and reorientation of market-oriented farms and food processing plants	+		+		+		.		+	
To effectively use the natural and cultural resources										
Raising environmental awareness	.		.		+		+		++	
Using the natural and cultural heritage assets for the development of tourism	+		.		.		+		+	
Effective promotion of tourist assets and tourist information system	+		+		.		.		+	
Development of cultural, health and sport services for the region's residents and foreign guests	+		+		+		+		.	

Impact	Symbol	Colour
Negative	-	Red
No impact	.	Yellow
Positive	+	Light Green
Very positive	++	Dark Green