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THE POLISH SPATIAL DEVELOPMENT CONCEPT VERSUS EUROPEAN VISIONS OF SPATIAL DEVELOPMENT PERSPECTIVES

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THE NATURAL SYSTEM IN THE LONG-TERM PERSPECTIVE OF A DURABLE EUROPEAN UNION AND POLAND

Abstract: The evolution of views on relations between the natural and social systems led to the concept of sustainable development (SD) in the last decades of the 20th century. The European Union established a system of political and legal instruments favouring SD and environmental protection implementation, by way of: programmes, subject-area strategies, directives, *etc.* The Polish government tries to implement these rules into Polish practice and its domestic legal system. However, the European Commission's last report (*Eurostat* 2007) outlines such varied problems relating to SD as: dependence on external energy sources, limited utilization of renewable energy sources, an increase in road traffic and amounts of generated municipal waste, a decline in biodiversity and non-compliance with common rules in environmental policy. There is a problem with predicting the future situation of the natural system in connection with the great number of general, external and internal factors affecting the UE. The most important of these are: unpredicted climate changes, the limited possibilities of steering the natural system, the limited influence of the EU on the policies of non-UE developed countries, and poor monitoring of natural processes as compared with social and economic processes. It is only possible to present general scenarios for future natural-system development within the European Union involving the improvement, stagnation or degradation of its system. Currently in the best state are the natural systems in northern, as well as East-Central Europe. The worst state is that presented by Western Europe. This means that the scenarios regarding stagnation or degradation may lead to the greatest deterioration of the state of the natural system in the southern and east-central parts. The harmonisation of EU and national policies is the prime instrument underpinning protection of the natural system, but in relevant policies will need to continue to be founded on the most important horizontal policies for spatial, environmental and climate-related matters.

1. Defining the natural system and the evolution of approaches to its links with the anthropogenic subsystem

The natural system represents an assemblage of biotic and abiotic components to the natural environment (the geological substratum, relief, the atmosphere and

climate, waters, soils, biotic elements) which are characterised by a high degree of complexity, as well as constant exchanges of energy, matter and information that are ongoing within it, and between it and its surroundings. A simplified approach has the natural system defined by reference to the geosphere, which is taken to consist of the lithosphere, atmosphere, hydrosphere, biosphere and pedosphere.

For both research and utilitarian purposes, the natural system is split into the anthroposphere, *i.e.* the elements of the Earth system created by humankind and/or significantly influenced by it. As civilization developed and our knowledge resources increased, the anthroposphere divided into two identifiable subsystems, *i.e.* the social and the economic. While these two are actually closely interlinked, the 20th century saw them treated by separate methods of analysis and study. Two main ways of approaching the relationships between the Earth's natural and anthropogenic subsystems came into existence – through their treatment independently of each other, and through their being recognised as one linked megasystem that may not be studied unless account is taken of the structure and functioning of all the latter's component subsystems (Miller 2002) (Fig. 1).

The 17th- to mid 20th-century dominance of the mechanistic approach to science and the role of humankind in nature ensured that specialised activity became evermore concentrated in three main and separate spheres: of the natural, the social and the

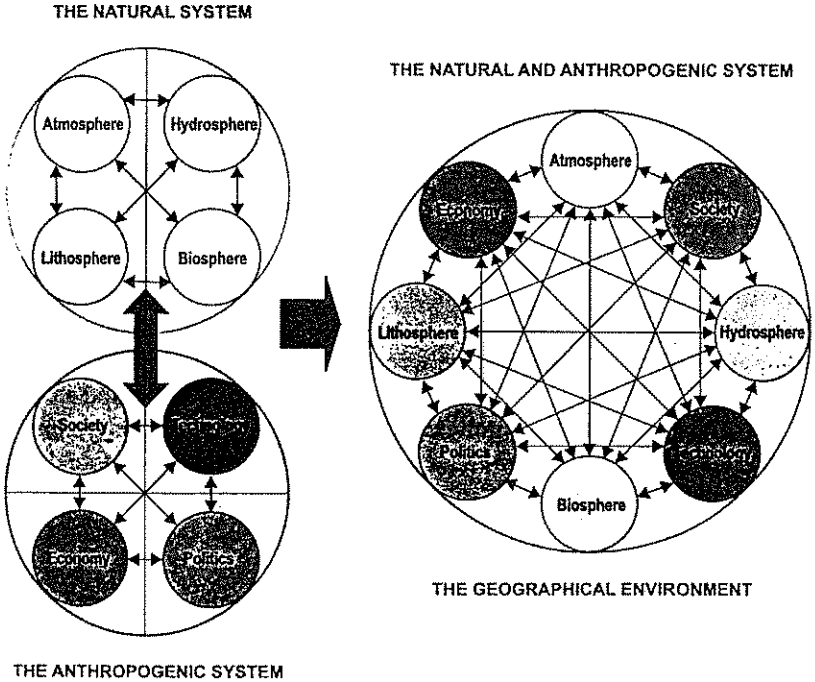

Fig. 1. The change in approach to studying the relationships between the natural and anthropogenic systems

Source: Miller (2002, altered).

economic. The effect was to emphasise endlessly the internal relationships pertaining to each of these spheres separately, while playing down the linkages between them. Such an "atomised" approach to reality became, not merely a paradigm underpinning scientific research, but also a basis for the existence of society and the economy, this of course extending into policies being pursued – by developed states in particular. The ultimate result was the emergence of far-from-sustainable political, social and economic doctrines that treated people as subjects (via colonialism, communism or fascism), and generated the kind of global conflicts achieving their ultimate expression in the mid 20th century. This was a period in which the problems associated with the excessive exploitation of nature – and awareness of the need for it to be protected – could not have any chance of obtaining their proper civilisational rank.

The change of approach prepared by the events of the first half of the 20th century actually took place in the second half. The concept of holism, *i.e.* the treatment of the aforementioned spheres as one entire entity, was one that evolved into existence in the 1970s. within the framework of the sustainable development concept offering the chance of a fundamental change in the previous approach to the development of humanity and the linkages between the natural and socioeconomic systems.

2. The significance of, and instrumentation applied in, maintaining nature in the EU

It was the experiences related above (as magnified by the ongoing degradation of the natural environment reflecting both the population explosion and the unsustainable nature of the socioeconomic development process) that was ultimately to force a change of approach to the way in which societies develop – this coming into effect in the second half of the 20th century. While the sustainable development concept is based around a "soft" anthropocentrism (to the extent that the good of humankind and society is treated as the central objective of development leading to the attendant subjectification of people in the process), main assumptions underpinning the ecodevelopment concept like striving to even out the standards of living of the Earth's present inhabitants (*i.e.* the intragenerational principle), as well as between present and future generations (the intergenerational principle) offered hope of real change in the approach taken to the development of humankind up to that time, as well as fuller accounting for the links between the natural and socioeconomic subsystems. The societies in the most developed states attempted to depart from the false assumption that the degree of dependence of development on natural conditions is ever smaller as growth continues, and that we are able to eliminate (for example by technical or technological means) most of the negative environmental effects of this development.

The assumptions underpinning sustainable development were taken on board by the European Union in the early 1990s. However, even in the 1980s, the EU had

begun paving the way for a switch from policy based around intensive socioeconomic development to sustainable development policy. Article 2 of Part One of The Treaty establishing the European Community recognises that one of the main developmental challenges faced by the European Community is "to promote throughout the Community a harmonious and balanced development of economic activities, sustainable and non inflationary growth respecting the environment". These objectives gained confirmation in the Treaty of Amsterdam in force from 1999. The European institutions are aware of the close links between all spheres of development and are striving to achieve such a Union-wide policy as will allow the development of these spheres to proceed harmoniously. This has been a complex and difficult process, most especially in the wake of the Union's enlargement by a further 12 Member States in the years 2004–2007, since the primary aim of the latter states is to reduce the gap between their level of development and that represented by the "15".

In order to pursue its environmental policy, the EU devised a system of law and policy in which Directives have indicated the general directions in which Member States are to proceed. From the point of view of the natural system being preserved in a state allowing society to function properly in the long term, the most important provisions can be thought to be:

- the "Birds Directive" of 1979;
- the "Habitats Directive" of 1992;
- Directive 2000/60/EC *establishing a framework for the Community action in the field of water policy*;
- the Wastes Directive of 2006;
- Directive 2007/60/EC on the assessment and management of flood risks;

as well as many Directives dealing with pollution abatement.

The basis for the policy by which environmental resources and quality were to be maintained has been provided by 10-year programmes. The 6th Action Programme for the Community which is currently in force has as its priority areas of involvement:

- reaction to climate change;
- the conservation of nature and biodiversity;
- the influence of the natural environment on people's health and life;
- the sustainable use and management of natural resources and wastes.

The above Programme served as the basis for formulating seven strategies that might with time become legal documents of Directive rank. Published in 2005 and 2006, the Strategies relate to:

- air pollution;
- the protection and conservation of the marine environment;
- the sustainable use of natural resources;
- the prevention and recycling of waste;
- the urban environment;

- the sustainable use of pesticides;
- the protection of soils.

2006 brought the adoption of an EU Action Plan as regards forestry, this following on from the Forest Strategy of 1998. A road map for renewable energy was in turn adopted in 2007.

Poland has managed to transpose the EC Directives on environmental protection into its domestic law. In line with the very wide scope of activity necessitated if the requirements set out in these regulations were to be met, a great deal of both time and money was considered necessary. This is why the Accession Treaties recognised the need to extend deadlines by means of the so-called transitional periods. While some of these even extend to 2022, the actual rate of adaptation of the national environment protection system to Community requirements leaves reason to suspect that all targets will not even be met on this time scale.

3. Problems with constructing a scenario for the development of the EU's natural system

The requirements and recommendations as regards environmental protection that the aforementioned regulations and documents provide for are addressed to all Community Member States alike, notwithstanding the fact that the said states find themselves in very disparate circumstances from the natural, social and economic points of view. While the legal instruments taken together do form a relatively solid basis upon which to make sustainable development and environmental protection a reality in the EU, their effectiveness is very much dependent on a whole array of external and internal factors. Where Poland is concerned, it is possible to identify three groups of determinants, *i.e.* those that are external *vis-à-vis* the EU, those that derive from the European Union and are external to Poland, and those that are in essence domestic.

It needs to be stressed that the uncertainty associated with the scenarios for the development of the natural subsystem is greater than those associated with the social and economic subsystems, because of:

- the sheer complexity of the natural subsystem (many times greater than those of the others);
- the much more limited degree to which the natural subsystem, as opposed to the social and the economic, is capable of being steered.

The problems with constructing scenarios are also influenced by external factors, creating uncertainty as to the future of the Earth's natural system, notably:

- the Community's limited influence when it comes to the shaping of the development models adopted by the economically-strongest and indeed most populous

states beyond its frontiers (*i.a.* the USA, Russia, China, India, Japan, South Korea and Brazil);

- the possibility of regional or super-regional armed conflicts or terrorist attacks taking place, this concentrating society's attention on matters other than sustainable development and the protection of the environment;
- the limited possibilities for anticipating or steering the direction and intensity of change in the global natural system, *e.g.* as regards extreme natural phenomena.

Important determinants of development are the processes internal to the EU, whose directions are likely to remain an uncertainty, this being another "make or break" period for the Union's future development. Even by itself, the differentiation into natural, social and economic subsystems of the Union ensures that the bases for the natural system's persistence are varied. Unfortunately, nature is not well suited to the gathering and processing of information using statistical tools, the data (*e.g.* from Eurostat) that could serve in assessing natural value and analysing the natural system's development to date being very limited. What is more, the degree of recognition of the resources and quality of the natural system is very uneven, though is by no means at its least good in Poland.

Despite the aforementioned processes whereby Poland has been adapting to EU environmental protection requirements, the future remains distinctly uncertain in this respect as well. This is first and foremost a reflection of the strong linkage between environmental policy and other policies, the latter in particular including spatial, economic, transport and energy policies. For several years, an authentically distinguishable climate policy has also been visible, this seeking to react to forecast changes in global climate. The policy in this respect offers a direct link between environmental and other policies. The best example here is spatial policy, which takes ever more account of the requirements of sustainable development and environmental protection. This is a consequence of the conferral of what are actually quite wide-ranging entitlements upon the lower administrative tiers (at *gmina* and *poviat* levels), without the higher (voivodship or central) levels having first been guaranteed the appropriate monitoring and regulating mechanisms. There is uncertainty as to the future direction likely to be taken by spatial development policy (as regards both the management of planning and physical development), as well as the implementation of particular spatial structures. These merely increase the scope for uncertainty as development of the natural system – and possibilities for it to be maintained in a good state – are forecast.

4. The state of, and main problems with, the implementation of sustainable development and environment protection policy in the European Union

Notwithstanding the EU's *de facto* spatial development, and the steadily expanding scope of its internal integration, there is uncertainty surrounding the future of the

Community. For sure the results achieved with implementing the Lisbon Strategy (as augmented by the provisions of the Gothenburg Strategy) are not entirely satisfactory. There is a question mark over the entry into force of the Lisbon Treaty. The European Union has been in a critical phase for some years now, the requirement being for it decide on directions to its future development over a period of as much as 20-30 years – these of course having great significance for the natural system.

The basis upon which to consider the future of the above system is an awareness of its marked spatial differentiation as regards the frequency of occurrence and quality of the natural elements occurring within it. If there is to be full knowledge of the natural environment's valuable features – in order that it can be protected and development forecast – it is essential that there be data available on:

- the values of resources and natural attributes;
- the degree of anthropogenic transformation (quality) of these resources and attributes;
- the sensitivity (or resistance) of natural elements to anthropogenic pressure.

The problem here is that, leaving aside a few biotic elements, the natural environment of the EU has not so far been evaluated in line with uniform criteria. This makes it difficult to identify the areas of greatest natural value. There are also marked differences in the degree to which the natural attributes in the Union's different Member States are known and appreciated. Unfortunately, the compilations from Eurostat are not particularly helpful in allowing for more wide-ranging intra-Union comparisons as regards the natural subsystem (*Eurostat* 2007). By taking account of such indirect factors as density of population or the level and structure of economic development, it is possible to conclude that the eastern part is of greater value than the western, while nature is better preserved in the north than in the south. But this opinion is not fully confirmed by the distribution of, for example, Europe's Important Bird Areas, or its *Natura 2000* areas, not least of course because their listing also reflects different degrees to which the environment is known – at least as much as it reflects genuine value (Fig. 2). Through the anthropogenic transformation of its resources and attributes, the environment often displays mosaic-like distributions, with areas of poor quality associated with former centres of the manufacturing or extractive industries, as well as places with highest population densities and/or subject to intensive use. A good quality of the environment more often characterises mountain areas than lowlands, since the former are mostly the less accessible of the two. Of particular importance to the policy whereby the persistence of the natural system is to be preserved are areas with ecologically specific types of environment that favour the preservation of the most valuable natural features, but are at the same time sensitive to many different forms of anthropopressure. These include mountain areas (particularly at high or moderate altitudes above 1000 m a.s.l.), the coastal zone with its lagoons, wetlands (including lakelands and marshlands), the valleys of the larger rivers and semi-natural forest complexes.

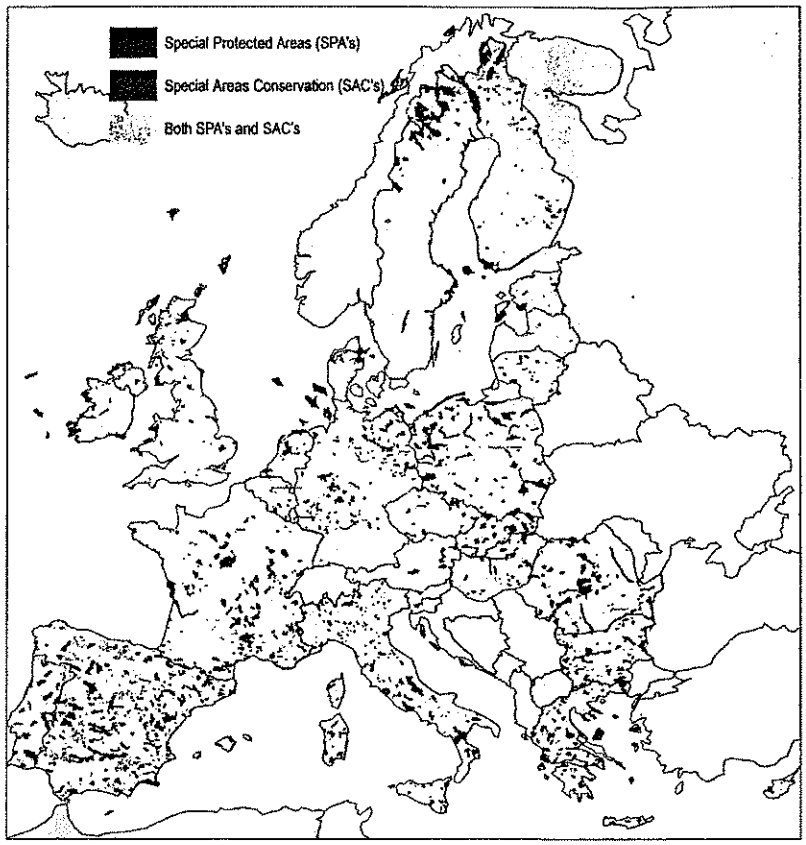

Fig. 2. *Natura 2000* areas in the EU Member States
Source: http://ec.europa.eu/environment/nature/natura2000/db_gis.

The 2007 report from Eurostat on progress with Europe's sustainable development in the years 2000–2006 made it clear that unfavourable trends were in particular to be noted for:

- the degree of dependence on external sources of energy;
- energy consumption and insufficient development of energy generation from renewable sources;
- the use of biofuels;
- increased motorisation and emissions of greenhouses gases from transport;
- the generation of municipal wastes;
- the biodiversity of farmland;
- the defoliation (loss of assimilatory organs) of forest's trees;
- threats posed by toxic chemical agents;
- people's exposure to ozone;
- cases of non-compliance with Community environmental policy or law.

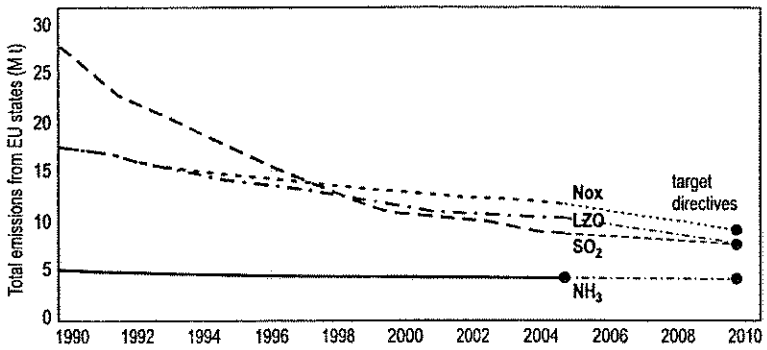

Fig. 3. Changes in air pollutant emissions from EU Member States
Source: *EU Environment...* (2008) (Figs. 3-10).

While the EU Member States have succeeded in reducing pollutant emissions to the atmosphere greatly (*e.g.* by 70% in the years 1990–2005 in the case of sulphur dioxide, by 34% for oxides of nitrogen and by 20% for ammonia), there remains a threat that the Union will fail to meet targets set for achievement by 2010 (Fig. 3).

These emissions are among the main causes of the degradation of vegetation, *e.g.* the defoliation of forests. In the light of the forecast global climatic change, it is particularly important that greenhouse gas emissions be reduced. In this regard, the progress made to date is more limited than in the case of the pollutants referred to above. In the "Old" Member States, emissions have remained at a fairly constant level for 15 years now, while the "New" Member States witnessed only a transient initial decline followed by a rapid increase in emissions of the gases from 2004 onwards (Fig. 4). It is for this reason that the attainment of the objective adopted in 2007 (an emission 20% lower in 2020 than in 1990) will be difficult, and requires commitment in a wide range of policies and instruments.

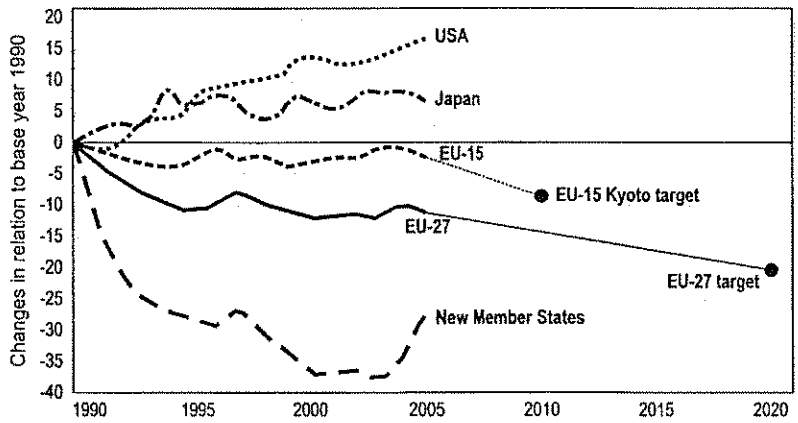

Fig. 4. Comparison of changes in levels of greenhouse gas emissions in the EU Member States and other countries (1990 = 0)

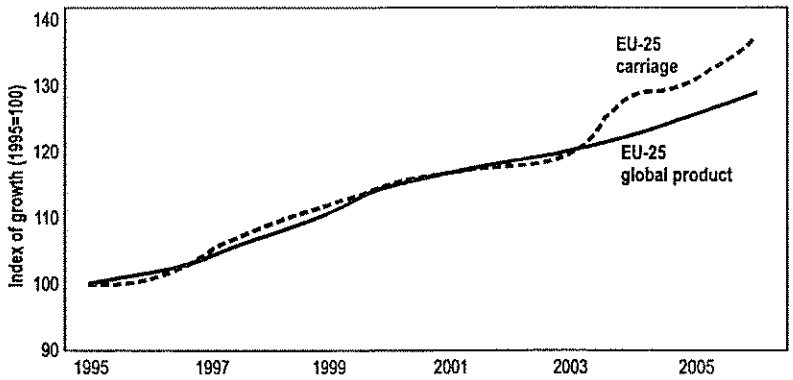

Fig. 5. Changes in carriage as set against the global product of the EU

One of the main causes of a high level of emission of greenhouse gases is the high dynamic to the development of vehicular transport. At the same time, transport is one of the main causes of the fragmentation of the environment. The increase in levels of carriage of passengers and goods in the period 1995-2006 was of 37%, as compared with the EU-wide increase in global product of 29%. (Fig. 5). The divergence of growth in the two processes is regarded as one of the indicators that development is non-sustainable. It mainly occurred through the increase in the number of vehicles in the new Member States – with more than a doubling since 1995. As of 2005, transport was responsible for 21% of the EU's greenhouse gas emissions, with as much as 93% of that emission being due to motor transport.

Wastes are an important factor behind the anthropopressure threatening the natural system. In 2006, some 255 million tonnes of municipal waste were generated within the European Union. The total amount was 13% greater than in 1995, 9% greater when expressed per inhabitant (Fig. 6). It is thus as a major success that we may look at the reduction in the proportion of wastes that is dumped in landfills from 62% in 1995 to 41% in 2006. However, this breakthrough was mainly achieved by

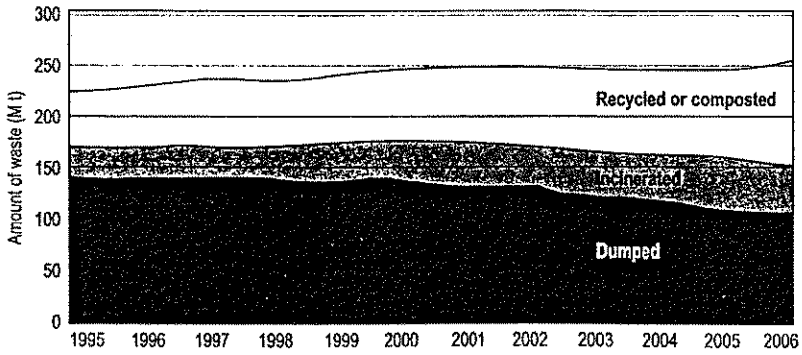

Fig. 6. Changes in the structure to the utilisation of EU municipal wastes

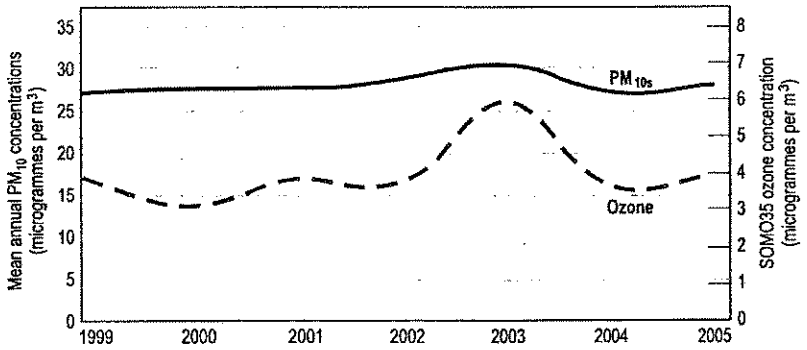

Fig. 7. Changes to indicators of air quality in urban areas of the EU

the "Old" Member States (Germany, the Benelux and the Scandinavian countries), in which dumping hardly takes place at all now, the wastes being reused, composted or incinerated. In the "New" Union, in contrast, a decided majority of all waste is dumped (*e.g.* more than 90% by volume in Poland, the Czech Republic and Lithuania).

The general factors exerting pressure on the environment that are characterised above have a wide range of impacts on the natural system. While emissions of certain gases and particulates are indeed down, urban areas have been subject to levels of suspended PM10 particulates or ozone in the air that have proved resistant to reduction for some years now, or have even in some cases displayed upward trends, notwithstanding their capacity to raise the incidence of illness and death among city-dwellers (Fig. 7). When hot years (like 2003) have come along, the concentrations of these pollutants have risen sufficiently to pose additional environmental and community threats.

The kind of environmental pressure manifesting itself above all in changes in land-use (the expansion of built-up areas and transport infrastructure, the disappearance of wetlands and modification of the agrarian structure in farmland) (*Europe's Environment* 2005) is capable of causing declines in biological and landscape diversi-

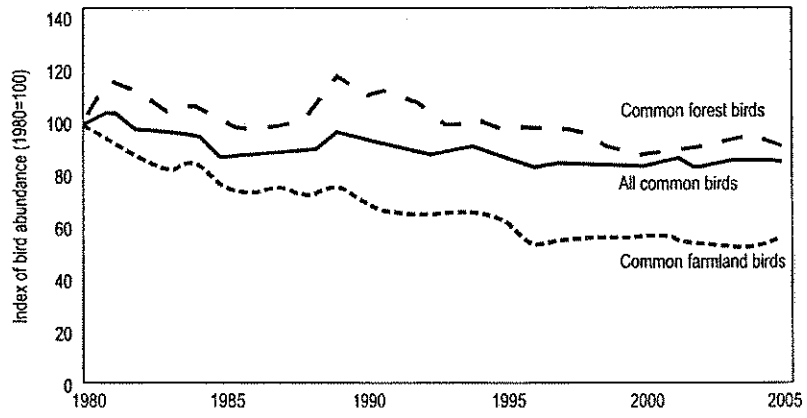

Fig. 8. Changes in the abundance of common bird species in the EU

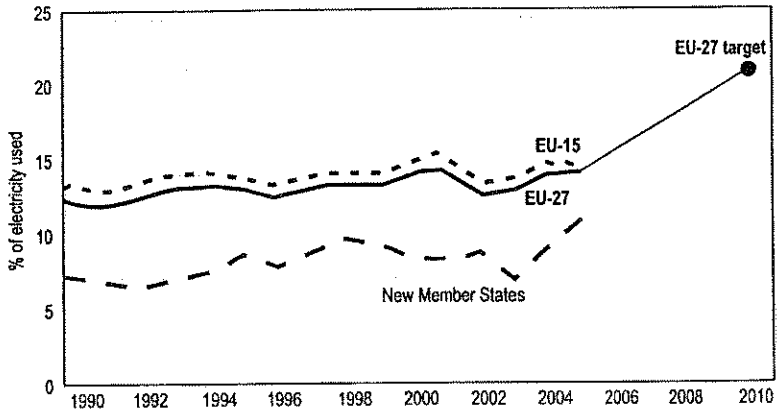

Fig. 9. Share of EU electricity produced from renewable sources

ty. Thus, for example, the years 1980-2005 brought a *c.* 16% decline in the abundance of common bird species. Bad enough, but as nothing compared with the 44% fall characterising agricultural areas (Fig. 8). Declines were much less marked in woodland and forest areas, but there was nevertheless spatial differentiation between Central and Western Europe, in which populations of woodland birds were maintained at a stable level over the period, and the north and south Europe, in which the observed decline was of more than 30% (*European Forests*... 2008).

EU Member States have been taking many steps to improve the quality of the environment by seeking to curb anthropopressure. However, the level of activity still looks inadequate, when set against the objectives as regards Europe's sustainable development and protection of the natural environment. For example, while the share of all electricity produced from renewable sources did indeed rise over the period 1990–2005 – if by only 2.1 percentage points to 14% – this has to be set against the already-adopted target for 2010 of 21%, which now looks unrealistic (Fig. 9). Austria and Sweden have taken the lead here, now generating more than half of their electricity using renewables, but many countries (including the UK, the Benelux and the new Member States) are still characterised by shares not exceeding 5%.

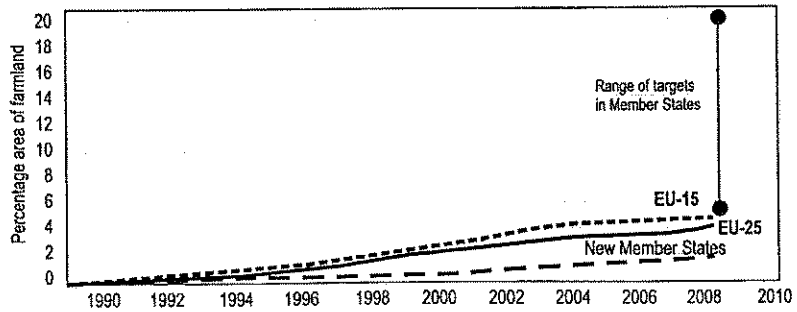

Fig. 10. Cultivated area in the EU farmed organically

One of the important ways to stop the loss of biological and landscape diversity is organic farming. However, the level of progress here again looks inadequate (Fig. 10), in spite of the pursuit of agro-environmental programmes; while the goals that have been set continue to look unachievable. Around 4% of the EU's farmland is taken by environment-friendly farming, though the figures for the "Old" and "New" Union are of 4.7 and 1.5% respectively. The leaders here are Italy (18%) and Austria (11%), while in Poland the percentage is as low as 0.5%.

The Polish situation resembles that presented above for the Community as a whole, though many specific features are characteristic for the states that have passed through a systemic transformation in the last two decades. When it comes to the value of natural resources, Poland is among the leading Community countries, this being largely thanks to the extensive nature of economic development prior to the systemic transformation. Symonides (2008) notes that Polish *Natura 2000* areas support some 20% of the EU's plant and animal species that are endangered and in need of protection, though the figure rises to 2/3 when birds alone are considered. Of the 190 types of naturally valuable habitats recognised to exist in the European Union, Poland preserves no fewer than 70 (or 35% of the total).

Equally, the pressure on Poland's environment is in many ways similar to what occurs in Europe as a whole. There is an increase in emissions of greenhouse gases, as well as a fragmentation of the environment brought about by new trends to spatial development, involving an intensification of land use in consecutive years. There is also too slow a rise in the share of all waste made subject to recycling and composting, while the quality of wastewater treatment is not sufficient to allow surface waters to achieve the state of cleanliness required of them. The conservatorial protection of nature and the landscape is also coming to seem ever less effective (Kistowski 2007).

5. An outline scenario for the development of the natural system

As was recalled in Chapter 3, uncertainty in regard to the development of many factors has the effect of limiting the reliability of forecast changes in the natural system. However, most of the forecasts concerning different environmental aspects (*e.g.* changes in emissions of carbon dioxide, difficulties with water supply – Fig. 11, threats posed by natural and technological factors) make it clear that unfavourable changes are above all happening in the south, and somewhat less in the west, with only much less intensive effects being noted in the CEECs and – in particular – in the north.

Differences that arise will mainly be conditioned by forecast changes in climate, such as increased air temperature and a change in the distribution of fronts and precipitation, whose main effects (after Sadowski and Sobolewski 2007) are likely to be:

- reduced water resources:

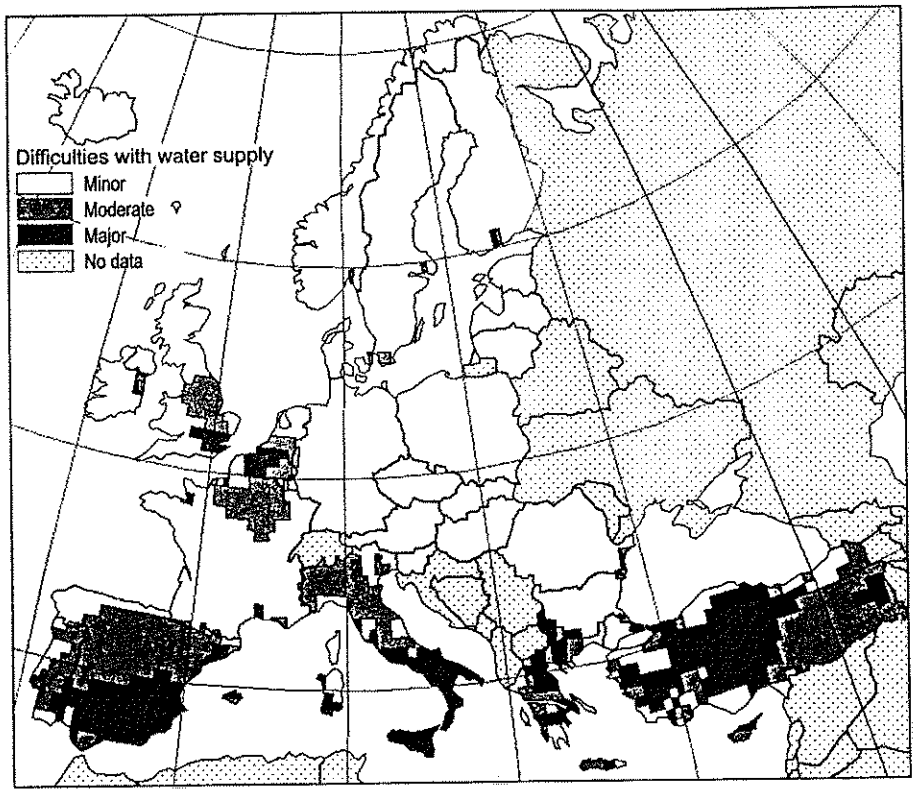

Fig. 11. Forecast difficulties with meeting requirements as regards water supply across Europe in the year 2030
Source: *The European Environment* 2005.

- an increase in the frequency and intensity of river- and storm flooding;
- intensified erosion and a lowering of the productivity of soils;
- the disappearance of glaciers from the Alps;
- a northward shift in the southern most limit of permafrosts;
- a decline in biological diversity;
- an increase in the threat of forest fires.

Unfortunately, analysis of EU policy to date, as well as of the trends to its development at different levels and the various scenarios presented (*e.g.* for that development's spatial dimension in *ESPON* 2007) offers support for the thesis that all or most of Poland will undergo marginalization within the Community as a consequence of its peripheral location (the term "most of Poland" giving credence to the possibility that the western part and some areas of the south might fare better). Of course, marginalisation as seen from the environmental point of view might not be such bad news, were it to lead to preservation of the naturally and culturally valuable features already present, with simultaneous safeguarding of conditions for the pursuit of a sustainable and non-conventional

economic model based in particular around tourism. Under these circumstances, positive development impulses might arise, as well as opportunities for further sustainable development of the regions, in eastern Poland in particular. However, if marginalisation were to be associated with unsustainable activity (like the locating of enterprises harming the environment on the large scale), then this would actually serve to exclude parts of Poland from Europe's sustainable development. This is why the arrears as regards development that continue to characterise the east of the country (in infrastructure above all) should be made good as a matter of priority and urgency – in this way ensuring that there is no irrevocable degradation of habitats whose destruction in general is seen to be the main cause of biodiversity loss. Overall then, the combination of the trend towards marginalisation (rather in GDR style but without any chance of such large amounts of remedial funding being brought to bear), plus the tackling of disparities in levels of development, will be the main challenges facing those seeking to protect Poland's natural system in the upcoming years. Ultimately, the state of nature here will depend on the skill and ability displayed in dealing with – and as necessary steering – these processes.

Basing ourselves on both hypothesis and simplification, it is possible to imagine three main scenarios for the development of the EU and Poland's natural system playing out over the next 10+ years. In so doing, it is worth adopting the division into "New" and "Old" Community states, and among them four main regions into which Europe might be divided roughly – but not entirely – in connection with that division. The regions in question are Western, Northern, East-Central and Southern Europe (see Fig. 12). These areas differ in the value of their natural environments, in the level of anthropopressure being exerted on them and in the quality (degree of transformation) of the environment, this reflecting the aforementioned pressure as well as the extent to which the environment is resistant to it. States in the "Old" Union have in the main achieved a high level of in-filling of their spatial structures and will now mainly be working to perfect them. This is most visible in the case of communications infrastructure. In contrast, new members are only now augmenting these structures – invariably and visibly at the cost of the natural system. This compares with the major degradation inflicted upon the natural system in the "Old" Member States long years ago (at least away from Scandinavia) – in the days when such matters were still less fully controlled. Obviously, it would be desirable for the shaping of spatial structures in the new Member States to not lead them down the same path as their counterparts previously forming "the Fifteen".

The general premises characterised above were used to generate three hypothetical scenarios for the development of the system over the next quarter-century, this being done, not on the basis of detailed parametrised analysis of assessment criteria, but rather in relation to expert knowledge and experience. The scenarios refer to some extent to those presented for Poland almost a quarter of a century ago by Kassenberg and Marek (1986). The scenarios then were conservatorial, technical-technological or ecological, and they correspond in general with a stabilization, worsening or improvement in the state of the natural environment. It was such descriptions that were used in the study

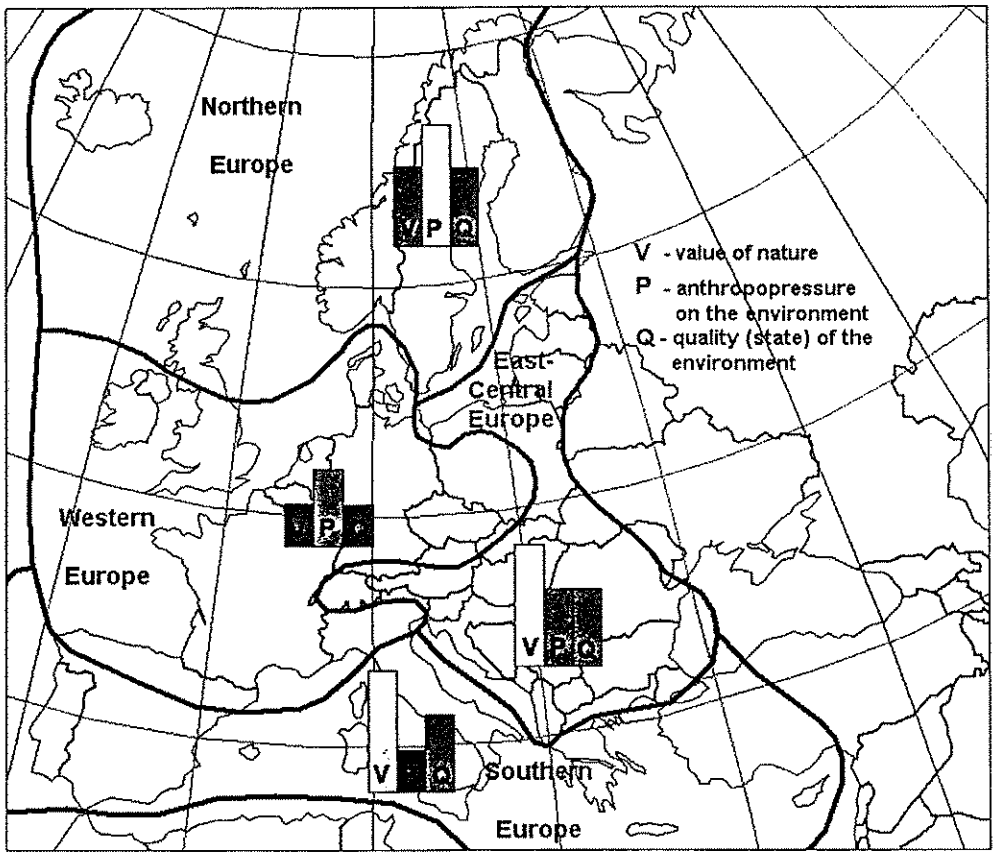

Fig. 12. An assessment of the current state of the natural system in the main EU regions (the lower and darker the bar, the weaker the assessment of the given element)

Source: Author's own work (Fig. 12, 13).

presented here (Table 1). Verification of anticipated directions to the development of the natural system should be achieved by way of much more detailed research.

Scenarios concerning deteriorations or improvements in the situation tend to be extreme in their outlook. The probable real answer is that different regions of Europe will develop in line with different scenarios less extreme than those outlined in general terms in Table 1. Equally, the current state of the natural system is now such that the only outcome that can be regarded as favourable for its further development is the one that anticipates an improvement (I). Only in this way can a reduction in the pressure being imposed on the environment be provided for, and thereafter an improvement in environmental quality or even in some cases (in Western Europe in particular) a raising of the value of the natural system. Needless to say, the achievement in reality of the "improvement" scenario will require Western Europe to make the greatest effort, while Eastern and Central Europe will have to do rather less, and Northern Europe least of all.

Table 1

Example scenarios for the development of the EU's natural system in a further 25 years

Main EU regions	Diagnostic feature	Present state	Example scenarios for development		
			improvement	stagnation	deterioration
Western Europe	value	low	moderate ↑	low	low
	pressure	moderate	weak ↑	moderate	strong
	quality	poor	average ↑	poor	poor
Northern Europe	value	average	average	average	low ↓
	pressure	weak	weak	weak	moderate ↓
	quality	average	high ↑	average	poor
East-Central Europe	value	high	high	average ↓	moderate ↓
	pressure	moderate	weak ↑	moderate	strong
	quality	average	high ↑	average	poor
Southern Europe	value	high	high	average ↓	average ↓
	pressure	poor	moderate ↑	strong	strong
	quality	average	average	poor	poor

values of diagnostics features: favourable average unfavourable

↑ improvement in the values for diagnostic features, ↓ worsening in the values for diagnostic features

Source: Author's own work.

The scenario anticipating stagnation (number II) – *i.e.* a continuation of trends present already – may in reality bring about a worsening of the state of the natural system, particularly in the CEECs and southern Europe. While Western and northern Europe are steadily raising the level of the technologies and pro-environmental instrumentation at their disposal, the improvement as regards materials- and energy-intensiveness are not improving sufficiently, or are even attesting to an ongoing worsening of the situation in Central and Eastern Europe, and in part also the south. In these areas, a prolongation of the stagnation scenario might well impair the value of elements of the natural system over a period of a quarter of a century. The most unfavourable situation for the system – and alas by no means impossible – involves the scenario of worsening or deterioration (III), whereby all of the parameters analysed in all regions could assume still worse values. Under this scenario, the particularly unfavourable changes may be those affecting northern Europe and the East-Central part of the continent (the latter effect in fact being the more probable outcome here). Northern Europe could also go through major change. It is potentially possible for a large number of unfavourable conditions to interact together – not least climate change, a departure from sustainable development policy in various different sectors, a greater number of political and military conflicts at local and regional level, and a worsening of social conditions, this being capable of

raising pressure on the environment and curtailing efforts in the name of its protection. Other challenges may likewise hide the true importance of environmental problems.

It is of particular importance that Poland be included in the western or east-central regions of the EU. This represents a signal that the country's area could follow various routes as regards the development of the natural system. It is hard to judge from today's perspective whether it will be more effective to apply technical/technological methods of protecting the environment, or for example active nature conservation. Probably the most helpful solution will be to apply various instruments in combination. However, there can be no doubt that maintenance of the overall high value of the Polish natural system is dependent on the preservation of the extensive semi-natural ecosystems in the north, east and south, as well as remaining enclaves of the natural environment that still remain elsewhere across the country.

Conclusions

The maintaining of the natural system is very much dependent on what emerges from the clash of views regarding socioeconomic development, as well as on the development model chosen by the state. Among the policies involved here, alongside environmental policy, the one of pretty much the greatest importance is the spatial policy as implemented at different levels. For several decades, a shaky balance struck between the said environmental and spatial policies allowed Poland's natural system to be maintained in a relatively good state, even though it was often necessary to somehow reconcile conflicting environmental and socieconomic interests.

While the EU has swung behind an environment-friendly sustainable development policy in its declarations, the socioeconomic and spatial processes ongoing in Poland for some 10-15 years now look ever less favourable to either the spatial or temporal persistence of the natural system. An example here involves the now-ongoing process of the partitioning of competences *vis-à-vis* conservatorial nature protection (between central, regional and local governments) which, while being done in the name of the more efficient utilisation of EU funding, may do serious damage to Poland's natural system, as may repeating with former military land the mistake made when it came to the "wild" privatization of land from the former State Farms. In this connection, and notwithstanding the various reservations, it is in large measure through the continued pursuit and reliable implementation in Poland of the EU policy from the last two decades that the maintenance of nature in the same state as up to now will depend. Alas, the Union has left unregulated a large number of matters linking with natural space, not least the visual and aesthetic side to landscape protection, the proscription of the destruction of biodiversity, but the permitting of landscape diversity loss. The EU has also stayed out of the physical planning sphere and the suburbanisation process, even though it has addressed these issues in subject-related strategies.

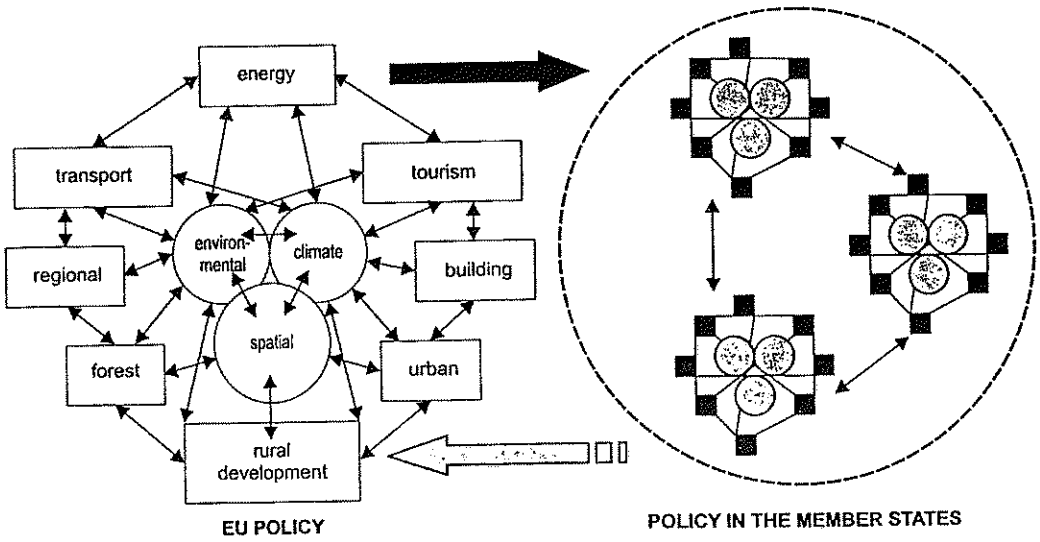

Fig. 13. The external and internal harmonisation of the policies of EU Member States

In the light of problems outlined and experiences to date, matters of key importance for the preservation of highly-valuable natural features would seem to be the spatial, temporal, hierarchical and subject-related harmonisation of a wide range of different policies (Fig. 13), most especially so that the spatial side to implementation involves a minimisation of any negative impacts on nature. This is why (as was noted above), the leading role in regard to all other policies should be played by spatial policy. Also crucial for environmental policy will be (apart from the obvious environmental policy *sensu stricte*), policy on energy, transport, (housing) construction, urban areas, agricultural (and rural development), tourism, forestry and the regions. The problem here is that the European Commission and European Parliament do not basically engage in spatial policy in the full meaning of the term, at best being involved in the implementation of various programmes, strategies and spatial initiatives (*e.g.* ESPON). Perhaps consideration should therefore be given to Community-wide strengthening of this aspect of policy, even in the face of the different approaches to space displayed in the Member States – which would certainly make the process much more difficult.

There is more and more talk of a new type of climate policy that would provide an answer to global climate change. Coming together here (sometimes linked together) are the preventative approach, whereby the factors leading to change are limited, and the adaptive approach, whereby people's spatial behaviour undergoes change. In line with the major doubt as to whether humanity can now do anything to hold back climate change, it is the second of these approaches that would seem to be the more rational.

The challenges Poland faces in the next decade and more are therefore seen to require a wise and at the same time modern designing and introducing of state spa-

tial structures, by both private and public entities at all levels. It must be hoped that the latter will be greatly supported in the task by a new national spatial development concept.

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