

AN EVALUATION OF SUSTAINABLE DEVELOPMENT OPTIONS: EXAMPLE OF “KOLUBARA” MINING BASIN

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Abstract: The ‘Kolubara’ Basin faces a number of complex economic, social, ecological and spatial problems, out of which some seriously hinder its future development prospects. The past development pattern, being still largely practiced, has resulted in a number of negative effects. On the other hand, already reached development level, industrial culture and abundant natural, human and other resources of the region, picture its future in a brighter light. In order to get more reliable insights in the factors at work and their impact, in this paper an *ex ante* evaluation of general development options of the region is undertaken, by applying a combined approach and method. The results of the analysis, however unequivocal, point to a general conclusion – that the region may embark upon a new mode of development, e.g., that of the sustainability paradigm, provided a number of steps are timely undertaken to remove at least some negative effects of the past development, and to diminish the impact of negative existing factors. Also, considerable support would be needed on the part of the Republican level, as the local (regional) actors, acting alone, would not be able to make best use of the ‘territorial capital’ of this region. This in the first place pertains to the necessary institutional and organizational adjustments of the current planning system and practice, which are highly incompatible to the needs of a more strategic development management approach.

Key words: *ex ante* evaluation of sustainable development options, a combined approach and method, lignite coal basin, assessment of ‘territorial capital’, environmental protection, restructuring, transition reforms, new strategic development planning approach, institutional and organizational adjustments

1 Introduction

The Mining and Energy Generation Basin ‘Kolubara’ (in the sequel: MEGS ‘Kolubara’; the Basin) is located approximately 40 km west and south-west of Belgrade, the capital city of Serbia. Its surface area covers some 547 km², while the production area proper encompasses ca. 134 km². Industrial and related facilities and installations cover some 62 km². Out of the total area, only 12.6 km² of the previously utilized spatial complexes and some dispersed spots have so far been recultivated. The total area composed of parts of four local communes (Lazarevac, Lajkovac, Ub, Obrenovac). Total population of the area is ca. 82,000 inhabitants. More than 30,000 people are employed, out of which some 10,500 in the mining extraction and energy generation sector [1].

On average, the annual open cast extraction of lignite coal in the Basin surpasses 27 million tons,

and the average annual energy generation by its power plants reaches some 1,161 Gwh. This makes 75% of the total annual lignite coal production in Serbia, and 3.1% of its total energy production [1].

Apart from a number of positive effects, the extensive extraction of lignite and energy generation have also caused many negative impacts, which have been only partly controlled and directed in the past [2].

In this paper the preliminary results of an *ex ante* evaluation of future development prospects of the Basin are presented, derived from a simplified analysis of its development potential and limits. The analysis combined a standard SWOT (Strengths/Weaknesses/ Opportunities/ Threats) analysis, supplemented by a rudimentary TIA (Territorial Impact Analysis) and an initial SSIE (Strategic Spatial Impact Evaluation). The findings may serve as a starting point for further, more profound evaluation, to ultimately result in a solid knowledge

base upon which sound, reliable and sustainable strategic development decisions are undertaken. Especially, more insights are needed with regard to the environmental impacts proper of various future development options. These should be researched through by preferably applying more rigorous methods and techniques of the SEA (Strategic Environmental Assessment) approach, as well as of the ISA (Integrated Strategic Assessment) approach. This is of particular relevance vis-à-vis the environmental protection being among the key strategic goals of the European Union [3, 4], which strongly influences the development prospects of the candidate-countries [5]. In general, the process of integration of these countries into the broader European framework will predictably introduce more rigor regarding the control of social, regional, ecological and other aspects of the mining and energy sector restructuring, all subsumed under the paradigm of sustainable development.

Namely, a number of problems encountered reflects the impact of some other, contextual factors, in the first place of the key processes of the post-socialist transition of Serbia, that is, deregulation, marketisation, privatization, and so forth. Among them, the crisis of strategic development planning plays a prominent role in this respect, for which reason this problem is also pointed to and briefly discussed here (Part 3), also encompassing a number of proposals regarding the necessary improvements (Concluding remarks and suggestions).

2 The rationale for the approach applied

The analysis learns from a more recent course in the environmental legislation of Serbia. Namely, following the application of the instrument EIA over a number of years, pertaining to particular projects, in 2004 a new instruments was introduced, which resembles a standard SEA, procedure being applied in order to evaluate broader environmental and related impacts of strategic plans/programmes and similar development documents. Also, some elements of the SSIE have been introduced, keeping in mind that this kind of analysis is likely to play a crucial role within the strategic framework of the social cohesion and territorial cohesion policy in the European Union [6, 7, 8]. Now, the mainstream efforts tend to combine standard EIA and similar procedures, on the one hand, with the more recent TIA, on the other, with a view to reach a more

integrated approached, viz., IIA (Integrated Impact Assessment). They all work on the assessment of the total "territorial capital" ("endogenous capital", and similar)¹ of an area, focusing on its comparative advantages and competitiveness in the international competition arena.

Such an approach has been chosen for two basis reasons: first, it makes it for a more complex evaluation of the problem in question and respective options; and second, it approximates the kind of reasoning and procedures which are familiar to the foreign actors who will predictably be interested in investing in the area of the MEGS "Kolubara", thereby providing for a better communication and interaction among all. Namely, the intention here is to compile, organize and present in a specific way a part of the existing knowledge base which may be utilized in the further considering of development potential and limits of the area among the interested players.

3 The impact of the overall collapse of the planning system and practice: a search for new institutional and organizational Arrangements

Already in the second half of the 1980s, the system and practice of planning in the former Yugoslavia (now Serbia) were both in a deep crisis and grossly hypertrophied. A **new system** was sought for, based on appropriate market-cum-planning/planning-cum-market approaches. The claims were then still formulated within the socialist ideological "narrative", with the aim of introducing more rigor into the over-regulated self-management "p(l)andemonium". At that time, Yugoslavia was still ranked among the planned-most, the participative-

¹ This encompasses a large number of measurable and non-measurable components, from five large groups of attributes, viz.: a) geographic and transport position (location) of the area/territorial entity in question; b) its physical (natural resources endowment), social and economic potential, and potential for innovation and development based on knowledge; c) institutional and organizational arrangements and communicative capacity of its society and institutions; d) total comparative advantages; and e) total competitive capacity (relative to other).

most, and the decentralized-most countries in the world.

The latter course of events happened to be disappointing vis-à-vis the early expectations. It posed the key problem on the other track, that of 'deregulation-cum-de-etatisation'. A fairly unhappy experience with the former planning fuelled a **wide-spread rejecting of planning**. Such an attitude is especially manifested among the architects of the transition reforms, mostly the so-called 'econocrats' of the neo-liberal ideological provenance, who have been almost generally keeping to the anti-planning and anti-development stance. The majority of them tend to completely discard any more ambitious notion of planning, thereby reducing its role to the so-called 'project-led cum market-based' planning approach and concomitant methodologies. Until very recently, talking development planning matters, especially sustainable development planning, sound like an anathema.

Thus, as elsewhere in the ex-socialist countries, the former planning system in Yugoslavia has been dismantled as from the beginning of 1990s, and the planning practice has from then onwards been steered by an apart mixture of old habits, few institutional innovations and the social, economic and political turbulence of the transition period. The previous system and practices of socio-economic planning collapsed, so far not to be substituted for by new arrangements, to match the impact of the key factors of the transition period, i.e., political pluralisation/democratization, privatization and marketisation. On the other hand, albeit the system of spatial/urban and environmental planning has been 're-touched' in the 1990s, and additional legal changes introduced in 2002-2003, the adjustments undertaken have not been harmonized with the factors mentioned above. In 2003 a new law was passed (*Zakon o planiranju i izgradnji/The Planning and Construction Act*), imbued with physicalism and other features that leave the new law quite incapable of dealing effectively with the actual challenges. The *Act* was assessed as being well below the already established standards of planning theory and practice in Serbia. In addition to this, the legislators have been found to be almost completely unreflecting upon the impact of the key factors of the transition period, i.e., political pluralisation/democratization, marketisation and privatization [25, 26]. The **legitimacy of planning** has been widely disputed, and the planning/policy arena is increasingly dominated by

various large capital groups. In many cases, there has been a strong criticism, and even an aversion towards any more ambitious mission of new planning, especially from the mentioned neo-liberal 'neophytes' who still believe in the efficacy of the 'unrestricted market forces'. In sum, spatial and urban planning is still a, with a **predominantly government-cum-business-cum-professionals activity** relatively poor participation of other actors. Namely, according to numerous sources, many social and spatial/urban groups, mostly those deprived (poor, deprived, disempowered, and similar) are not adequately represented in the current development planning and environmental policy systems and practices [27].

Contrary to this, **significant improvement has been achieved with regard to the environmental legislation**. In 2004 three new acts were passed, whereby the state has started developing a formal (nominal) environmental protection apparatus, also including a segment for sustainable development. However, much more has to be done in the sequel, in order to better fit in the legislation of the European Union, during the process of integration of Serbia in the key European trends. Also, the enforcement of the already passed legislation is likely to take longer, since new business-minded tycoons, as well as many other actors tend not to observe the new legislation, along with the poor observance to the environmental legislation in the earlier periods.

Now, both the system and practice seem to have not developed to a **genuine planning mode**. Instead, they more resemble the so-called **quasi/pseudo-planning**. Three **heuristic modes** dominate the planning landscape of Serbia (and another one emerging only recently):

- Planning as the crisis management.
- Planning supporting and enabling wild privatization and marketisation of public goods.
- Planning as a means of political pluralisation and democratization.
- Planning supporting complex societal transformation and modernization.

In terms of their respective **political functions**, the majority of spatial, urban and other development plans, which were prepared over the recent 15 years or so, seem to have been following other purposes than those conventionally attached to the 'true' plans. They have thus more manifested themselves by what was 'beneath the surface' [28], than they did carry the declared (nominal) values, aims and objectives,

viz.: (1) Creating confidence. (2) Providing symbolic reassurance. (3) (Merely) countering criticisms. (4) Providing (purely) monitoring purposes. (5) Generating commitment by others. (6) Back covering. (7) Providing bid for resources. (8) Making everything legal and above-board. (9) Establishing arena for debate; etc.

Until recently there has been a lack of effective political will to introduce more strategic development-oriented planning, in all spheres (that is, socio-economic, spatial, urban, environmental, etc.). Only in few recent years a number of national development strategies and similar documents have been produced, now around 30 of such schemes. However, **sustainability concepts** feature relatively poor in these documents, as mostly general principles and criteria of sustainability predominate, without concretized, operative and analytical conceptions of sustainability. Although an increasing number of them has made use of the categories of sustainable development, this paradigm has been more utilized as a ‘political and professional mantra’, than it has exerted an effective impact on the development planning/policy. For example, as from 2000 Serbia received a fair portion of foreign assistance and support (apart from other sorts of public revenues, e.g., from privatization, loans, etc., totaling ca. 50 billion USD). However, only minor part has been directed to the sustainability issues proper. Consequently, the so-called ‘eco-eco’ restructuring of the grossly dissipating economy, services, household sector consumption patterns, and unbalanced patterns of spatial development is still kept low at the political and professional agenda. Only from recently, there has been a flux of new documents, and more is pending, albeit not well mutually coordinated and harmonized, and worked out via various approaches and methods. Much hope has been put in the *National Strategy of Sustainable Development of Serbia*, now still under preparation. and no new documents of the kind have been worked out so far at the national and regional level [29]. To a large part, planning lost its legitimacy because the majority of the former public interests collapsed, and new, indisputable public interests have not been established. Now, planners face the basic dilemma of **what is to be denoted as new public interests**: ‘general public opinion’?; ‘sum of the most numerous interests at some point of time’?; ‘bundle of current particular compromises’?; ‘interests of the most vociferous-and-powerful actors’/‘would-be-

winners’?; ‘veritably democratic interests of the overwhelming majority of actors’?; ‘potential interests of the disadvantaged-and-disempowered-and-deprived’ (now prevalingly apathetic and dormant public)?; etc. Under such circumstances, new roles of planning are hardly known to the public at large, in part as a consequence of an overall anti-planning stance among the majority of political, economic and expert elites.

In this respect, the inertia rules the professional landscape, since there has been **a lack of new theoretical approaches and methodologies**, to match the impact of new dominant factors and the still miserable social and economic conditions in the country (to note, Serbia ranks among the least-developed countries of Europe, its GDP per capita not exceeding some 3,000 euro). Regarding the approaches and methodologies applied, the traditional *ex ante* planning evaluation still prevails, and more *ex post* and *ex continuo* evaluation is still missing. Particularly, there has been a lack of theoretical and general methodological research regarding the alternative planning modes in the transition period, in which respect the situation in Serbia sharply contrasts with that in the Western planning. There has been neither a systematic study of the ‘dark side of planning – the domain of power’ [30], nor of the transferred and newly generated distortions in the triangle power – knowledge – action [31], these aspects being especially important for the reform of the planning system and practice in the post-socialist transition.

The **problems of planning system and practice were concomitant to the overall institutional developments** mentioned above. Namely, although comfortable institutional and other certainties for planning from the previous period have simply evaporated in the 1990s, most planners seem to have avoided fundamental debates and concerns of the theoretical and institutional underpinnings of the existing planning system with regard to the key issues of its legitimacy, role, mission, political background, contents, procedures, etc. Instead, they seem to have inclined to discussing ‘safer’ issues of development policy/planning, narrowed down primarily to technical problems. Now, after a decade or so of such a professional myopia, there is a sheer need to switch to a more rigorous assessment of the existing practice and future options.

The **planning system is too centralized**, as well as **non-democratic** (or, democratic only in nominal terms), since the radical re-centralization of Serbia and was undertaken in 1990, and subsequently the sub-national tiers were deprived of almost all effective planning instruments. In addition to this, the majority of regional entities ('districts') and communes still lack competent administrative machinery and expertise, as well as other support (e.g., research, planning information support, etc.) for effecting autonomous planning policies. Only recently (2006), the constitutional changes provided for more centralization [32]. There has been **no more ambitious strategic thinking, research and planning**. (which is, however, somehow understandable vis-à-vis the only recently terminated international sanctions and isolation of the country). Instead, a recent **"agency-and-management syndrome"** in Serbia followed that what become in vogue with the global managerial restructuring of government under the neo-liberal umbrella of the so-called New Public Management [33]. Apart from that, the majority of the development documents that have been passed in the meantime, grossly lack elaborated **implementation devices** (policies and instruments). Especially in the field of urban planning, the detailed ('regulatory') schemes prevail over the more strategic development schemes for larger urban and regional areas. Specific development projects (and, only sometimes, more harmonized programmes) by far outnumber strategic planning schemes.

In general, **knowledge base-support** for strategic development planning is still grossly insufficient. [34]. The **planning/policy information, research, institutional and other support provided by the state and other public agencies** often does not satisfy even the barest needs, partly for a general scarcity of resources concomitant to the overall and deep social, economic and political crisis the society found itself in as from the beginning of the 1990s, and apparently even more for a still poor institutional culture in the public sector.

The **integration and harmonization of various aspects of planning and policy**, i.e., social, economic, spatial/urban, environmental, is very poor. In effect, **physicalism** still dominates the scene in spatial and urban planning, and the elements of implementable socio-economic development and environmental policy concepts are scarcely within this block. This is paralleled by **ecologism** in

environmental planning and policy. Inertia rules the professional landscape, as there has been **a lack of new approaches and methodologies**, to match the impact of new dominant factors and the miserable social and economic conditions in the country. Regarding the approaches and methodologies applied, the traditional *ex ante* planning evaluation still prevails, and more *ex post* and *ex continuo* evaluation is still missing. In addition to this, a new 'intruder', **master plan**, not being institutionally positioned in formal terms, popped to the development planning main scene, promoted and promulgated by big interest groups in some sectors (tourism, agriculture, transport, and so forth), in a well orchestrated activities of international business groups and their local (Serbian) counterparts. The promotion of various sectoral master plans is often directed against the protections of public interests, also rendering a number of tensions vis-à-vis the legally formalized planning procedures and instruments in spatial, urban and environmental planning policy.

The stipulated legal propositions pertaining to the **openness, participativeness and transparency of the planning/policy procedures** fall easily frail in the planning practice, resulting in the very poor content in this regard. In effect, it is but one manifestation of a poor legitimacy of transition reforms, which suffers from a number of failures, viz.: exclusiveness of the majority of reform projects, instead of their imperative inclusiveness; a lack on the part of the political and economic elites to provide for overall societal dialogue, co-operation and synergy on the key transition problems; consequently, a non-capability to reach a general societal consensus on this issues, and a new 'societal contract'; poor *ex ante* evaluation of consequences and implications of various trajectories (options); an across the board dismissal of alternatives which the elites deem unsuitable; poorly developed notion of general (collective, public, overall, and similar) interests of the transition reforms; poor participation of broad brackets of society and the public at large (reflecting an almost obsessed aversion towards a broader participations of various groups of actors, especially of those who are not 'consecrated' into the expert finesse on the key themes; a basically unjust (non-equitable) reforms, resulting in a growing social polarization and 'Social Darwinism'; a poor public-private partnership; grossly non-competent administration, yet primarily working in favor of

greedy and selfish "reformers", also performing primarily *pro domo sua*; and so on [35].

There has been a **lack of planners and other experts experienced and knowledgeable in practicing planning under the new circumstance of political pluralism and radically changed structure of stakeholders and concomitant institutional arrangements**. This also applies to 'educators' in general, since the prolonged international isolation of the FR Yugoslavia in the 1990s has caused the gross of their knowledge and capabilities irrelevant, the impact of which could still be detected in the public arena. In sum, it seems that many planners would not be able to assume new roles that they are expected to on the part of the society at large.

Specifically, the key **problems of regional governance and planning** have been grossly neglected, both in terms of the institutional ("systemic") coordinates, and the current practice. The flaws in the regional system have been recognized as early as in the mid-1990s, followed by a number of proposals aiming at its reform, to render it compatible with the impact of key transition factors. However, until recently, no more ambitious constitutional and systemic changes have been introduced, now Serbia lagging behind the dominant European tendencies (viz., "a Europe in flux of regions", "a shift from government to governance", renewing the principle of subsidiarity, etc.).

Worst of all, **manipulation, paternalism and clientism** still represent dominant forms of power, which is a problem in itself, Serbia being one of the most corrupted countries in the world. What is now most missing is a **non-manipulative persuasion**, as well as the **authority of rational professional values**, as the forms of communication and interaction that seem to provide the only hope for the development of a democratic, emancipatory and transformative planning mode.

In sum, almost 20 years after the fall of the Berlin Wall, Serbia still finds itself in a post-socialist proto-democracy ("post-socialist proto-capitalist *laissez-fairer*"), yet with only rudimentary developed institutions of representative democracy, civil society and market economy. On the one hand, the **better parts of the former self-management system of the past ideological and political monopoly have been in the meantime abandoned and almost forgotten, most prominently, for example, the practices of territorial and work**

participation. On the other, its **bad parts have been kept and transferred via the retrogressive miss-events of the 1990s, viz., paternalism, manipulation, clientism**, and so forth. "Wild capitalism", concomitant privatization of the kind, and the co-called "Social Darwinism" have taken place without a veritable social and political dialogue and consensus on the strategic issues of the transition reforms. Effectively, Serbia has been developing as a "hybrid" society. **Instead of strategic governance, a chaotic decision-making rules the scene, encompassing a strange combination of elements of the so-called "crisis management", "planning-supporting-privatization-and-marketization" (which is especially visible in urban and environmental planning), and "project-led planning"**. European "asymptotic ideals" of veritably sustainable development are far away at the horizon, as, instead of more recent European planning practice and culture of sustainable development, the pace at which the existing "paleo-industrial structure" of Serbian economy and services is being restructured is still fairly slow, as well as the pace at which more rigorous spatio-ecological (environmental) criteria are introduced. Also, the **coordination among the development policy decisions at various governance levels (state, district, and municipal/communal) is very poor**. What is now most missing, however, is a more consistent and coherent strategic framework of a kind resembling the German *Steurung*. The Serbian "post-socialist Argonautic" has been facing a number of difficulties, also exacerbated by a lack of adequate institutional and organizational adjustments. An apart nexus of old and new "institutional Zombies" rule the scene, thereby rendering the "eco-eco" restructuring of the economy, services, the household sector and dominant spatial development patterns even more complex.

4 Key Results of the Analysis

4.1 Strengths

The area of the MEGS "Kolubara" is a highly industrialized region, with a long and well-developed industrial culture of more than 110 years of mining works in the Basin "Kolubara", which undoubtedly features as a comparative development advantage, and despite the negative impacts of the miss/events of the 1990s (dissolution of the former Yugoslavia,

regional wars, international sanctions towards Yugoslavia and its isolation, etc.)

The region has its social, economic and human capital well developed, which especially pertains to the commune of Lazarevac, with the GDP per capita of some 200% of the average for Serbia [1].

Work force ("human capital") is fairly well qualified, even for some more sophisticated professional tasks, although some qualification levels and specializations are still missing, especially keeping in mind the predictable changes in the structure of the economy. In addition to this, the unemployment level is well under the Serbian average.

So far initial steps have been undertaken with regard to the privatization of property, whereas the number of private enterprises (shops, and so forth) has sharply risen in recent years, albeit variously in territorial terms. The share of private ownership in the total GDP is largest in the commune of Ub, that is, 75%.

The Basin belongs to the Broader Belgrade Area, which is the most developed part of the country. Mostly for this reason, the level of poverty and social deprivation in the Basin is well under the average for Serbia, the Broader Belgrade Area recording the lowest percentage of poverty in the Republic, viz., 10%. However, according to some indicators of more indirect significance, the poverty levels in some part of the "Kolubara" region may be well above the Republican average, mostly in some rural parts, and/or in settlements with less educated population, and/or with the higher unemployment, and/or with older populace, and/or with a larger share of refugees in the total population [9].

4.2 Weaknesses

In general, the dominant production pattern in the Basin has been generating a poor and grossly negative "ecological footprint" on its environment, as well as a number of negative impacts on the broader regional area. On the one hand, an intensive lignite extraction and concomitant generation of energy as from the first half of 1970s, shortly followed by development of a number of supplementary activities, mostly in the secondary sector, launched few cycles of fast economic and social development in this region. On the other, for more than thirty years now, huge environmental

effects of such development pattern, largely negative, have been neither controlled efficiently nor timely removed. Apart from that, the dispersion of positive and negative effects was unequal over the total regional area, resulting in its unbalanced development in territorial terms.

Following the 1980s, in effect the years of economic stagnation, the prolonged economic, social and political crisis, which started in the beginning of 1990s, has only added to the otherwise poor former economic performance (with the decline of almost all indicators of employment, production, capital and maintenance investments, closures, bankruptcies, and so forth), also causing a number of new negative spatial and ecological impacts.

The migration of rural population to urban and industrial centres, often arranged for as its resettling in order to open new lignite open cast fields, has been intensive already as from the very first development cycle. As a consequence, now it is concentrated in urban centres of Lazarevac, Vreoci and Veliki Crljeni. Less developed, far behind them, are the urban centres of Lajkovac and Ub. In general, the key approach and practices regarding the resettlement of rural population to urban centres have constantly suffered from many flaws, resulting in a number of negative effects. In effect, the system worked only occasionally. As a rule, the resettlements fail to meet a right timing, even to the extent that the programming and executing the preparatory works heavily jeopardizes regular extraction of lignite, its processing and energy generation [10]. On the other hand, the expropriated (bought-off) agricultural land for industrial purposes has almost always been underpaid, that is, well below real market values.

In sum, the economy of the "Kolubara" Basin suffers from many structural deficiencies, viz.: the overall productivity is poor and low; equipment and machinery are utilized non-sufficiently; a lack of technological research and innovation and pertinent investments, effectively, as from the end of 1980s, resulting in the now largely obsolete technology applied in the Basin; the decline in exports, as the region has experienced a loss of a number of former markets, due to the dissolution of the former Yugoslavia, as well as due to new international economic constellation following the fall of the Berlin Wall; a huge deficiency of financial resources for capital and maintenance (operative) investments;

huge financial losses; insolvency; low salaries of the employed personnel (in relative terms); etc.

The prospects for the future recovery of the economy in the Basin are, however, not bright in each and every respect, especially for some deficiencies in the work force structure, viz.: the unemployment has increased in few recent years, following a number of problems in the local/regional labour market; a number of qualification brackets is missing, especially for the most sophisticated professional task in developing an economy "based on knowledge", information support activities, market research, and similar; the average age of the employed is 48,5 years; although there has been a slow-down in the increase in wages and salaries of the employed in the region, they are still well above the Republican average for equivalent levels of qualification and competence (respectively, it used to be 2.4 times the Republican average until recently, and now is 1.2 times the average for Serbia, causing a migration of a part of the best educated and/or qualified people, predominantly younger professionals, to other places, in the first place to the capital city of Belgrade, as well as abroad, within the general "brain drain" Serbia has been experiencing for many years now); particularly are missing some engineers specializations, as well as some in the mid-level brackets; there has been a chronic lack of the most competent "strategic brains" in the field of long run development programming, directing and management; low levels of employment in the larger parts of the communes of Lajkovac and Ub (with the exception of agricultural sector, which absorbs the gross of employment) will predictably play a limitation for their more intensive development in the future; etc. A large part of the existing work force, most notably people who have been unemployed for some time, will predictably face a "structural de-qualification" of their competencies, vis-à-vis expectable changes in the future demand for a more sophisticated knowledge.

However, the ultimate hindrance has to do with **the sectorial structure of regional economy**. Namely, the so-called "mono-industrial" and "paleo-industrial" economic structure prevails, mostly the capital intensive one, reflected in a large share of coal extraction and processing, energy production, non-metal activities, construction industry (material inputs), and similar, as compared to other activities. The economic structure is poorly ramified and diversified, and the steps directed to its

improving are urgently needed. Apart from that, the key activities of the mining and energy sectors are not flexible in locational terms, that is, they are not "foot-loose" enough. Consequently, this implies that enormous quantity of raw materials and primary inputs has to be processed and transported within the region (also, some of them *in situ*), additionally causing a number of serious negative environmental effects. Also, the relative usage of natural resources, that is, physical space, water and lignite, per a unit of generated product or service (energy, industrial production, and so on), is extremely high, and is not matched by equivalent organizational capacity of the production systems and development planning/policy institutions and agencies to cope with negative ecological and other effects.

There has been another factor of similar relevance for the future development prospects of this region. Namely, technical infrastructure (i.e., for energy supply, transportation, water management, sewage, and so on) has not been sufficiently developed, to satisfy demand, which has been the case both in the past and now, and also predictably in the future, unless new construction takes place urgently. Partly, this has resulted from poor maintenance of technical infrastructure in the 1990s, and a slow recovery as from 2000 onwards. The most critical situation is in the settlements of Vreoci and Veliki Crljeni (in the commune of Lazarevac).

Next, there has been a lack of both potable and the so-called "technical" water in the region, as well as water resources needed in the agricultural production. Also, as a result of intensive coal extraction, many wells in the region have been exhausted, dried out, and, ultimately, disappeared.

In sum, the environmental situation in the Basin "Kolubara" is very poor and serious for its negative effects, consequences, and implications. This derives primarily from a high contents of sulfur components in the lignite ore, and its low caloric value, as well as from the traditional, and in some cases obsolete techniques applied in its extraction and processing. Specifically, the pollution of water, air and soils is well above more rigorous European standards, as well as well above what is stipulated for and exacted in the pertinent Serbian legislation. Additionally, for the same reason, the quality of urban life in a number of settlements in this region is not satisfactory. Although many improvements in ecological terms have been undertaken in recent years, for examples, mounting new filters in two

power plants, the gross of environmental pollution and damage that has been generated in the previous 30 or so years, has not been removed, or pollution, cleaned, so far. Especially, the percentage of lands utilized for lignite extraction and processing still does not exceed few percents of the totally converted lands (mostly from the former usage in the agricultural sector). The estimates of total costs needed for the complete spatio-ecological rehabilitation of the damage/pollution amount to many hundred million euros, albeit so far there has been no complete and in every detail rigorous assessment of the kind [2]. This problem will be mounted within the activities of Serbia to join the European Union, and, following the signing of the preparatory documents, to start the process of adjusting its environmental and spatial legislation, institutional and organizational arrangements and practices to those of the Union.

The results of the so far undertaken privatization in this region are ambiguous. On the one hand, the **privatization process** grossly lags behind the pace in other transition countries. On the other, the litigation in this respect has also, in an indirect way, kept some fine niches for more reasonable and prudent steps in the future, contrary to a number of no-well-prepared restructuring in some other sectors, especially regarding the privatization of large production complexes in the mining extraction and energy sectors. This particularly applies to the expected increase in unemployment, as one of the effects of the pending privatization of larger parts of public sector in general. As an interesting trait of locally and regionally specific industrial culture, the overwhelming majority of the work force employed within various production units of the system "Kolubara" tends to keep to the employment in the system "at any price", thereby grossly neglecting evidently emerging chances for private initiatives, entrepreneurship and business, especially in the domain of small and medium size enterprises. Following the pending, intensified process of privatization, this characteristic of the local labour force will most probably diminish, slowly though.

Some particular problems pertain to the **rural parts of this region**: on average, the rural parts, with few exceptions only, are less developed than the industrialized parts of the Basin "Kolubara"; the average agricultural property and lot size is low, as small parcels of land predominate and thus hinder prospects for organizing a more

rational agricultural production; technical support to individual farmers by public and private actors in industry and commerce is fairly poor, thereby thwarting more efficient practices; many rural areas are not well served by the network of public services; in the predominant part of the total rural area the networks of technical infrastructure are not sufficiently developed; etc.

4.3 Opportunities

Excellent geographical position, proximity to the Belgrade metropolitan area, and well developed traffic and communication connections with the neighbouring areas, all feature as a key element of the "territorial capital" of the "Kolubara" Basin region, and play prominent role in its future development prospects [11].

This area endows with large quantities of non-renewable, partly renewable and renewable natural resources, in the first: coal (lignite) deposits, non metallic raw materials, thermal water, agricultural land, and, to a lesser extent, water resources [12]. They may be utilized in many ways, and in various sectors, e.g., mining, energy, manufacturing industry, agriculture, tourism, and so forth [13]. Provided they are exploited in a way that is economically, socially and environmentally acceptable – also applying contemporary European practices, and introducing some international obligations Serbia has recently subscribed to as well – this region has a fair potential to embark to development path which is veritably sustainable. This also includes the usage of some natural resources which have not been exploited so far.

Some traditional markets for the commodities and services this region has been supplying have been at least partly recovered, and some new are emerging. Also, a number of potential partners from other regions has demonstrated readiness to cooperate with those in the "Kolubara" Basin.

The mining corporation "Kolubara" and the power plant "Nikola Tesla" are Serbian leaders in the extraction of lignite and energy generation, which is "development and market capital" of considerable relevance. The rise of energy prices in international markets also plays a positive and stimulating role to that end. Provided some other preconditions are satisfied, the majority of commodities from this

region may well become competitive in some international markets.

In recent years a number of steps have been undertaken to improve on the "systemic" position of the mining and energy sector [2, 14, 15, 16], in a way that is compatible with contemporary European practices in the sphere of industrial policy, especially with regard to support the restructuring of the coal sector. Such developments also impact the future prospects of the Basin in a positive way.

A well-developed "human capital", including an old tradition and industrial culture, is likely to play positive role, mainly in the non-traditional and/or new activities outside the lignite extraction and processing. For that side, vocational schools and training are well developed in this region.

Even the extremely complex spatial and ecological problems of this area appear to be solvable as from recently, as a number of steps have been undertaken to improve the environment in this region. A large number of international actors provided support to this end, and some investors, predictably future "strategic partners", demonstrated readiness to exploit and process its natural resources by closely observing high ecological and other standards, that is, in a sustainable way.

In recent few years Serbia has passed a number of strategic documents that stipulated for introducing elements of sustainable development in the preparation of local and regional documents, as well as for locating strategic partners who would be ready to cooperate in this way [16]. This opened many niches for investing in new development projects and programmes in the "Kolubara" Basin as well. This trend is likely to ultimately help solve even some complex ecological and related problems that have long stayed unresolved. In this respect, the local (regional) actors might more insist at the Republican level for a larger portion of the *National investment plan (NIP)* to be directed to this region, through lobbying and similar activities. The available financial, human and other resources should be used for a more intensive development of the SME sector, preferably integrated into large production and commerce systems. Some of the already scheduled "business incubators" may well be located in this region, to serve both local (regional) and overall needs and goals. It should be noted that the "Kolubara" Basin represents a paradigmatic case of

a "brownfield" area that wait for restructuring in each and every aspect.

Provided better maintenance is undertaken, and services scope and quality considerably improved, communal and housing stock may also be utilized as local assets. The companies in this sectors have always been an integral part of the entire production and service systems, particularly in the commune of Lazarevac, contributing to the development of some modes of partnership that, as appropriately modified "models", may be useful even in the future, despite the fact that the practices experienced so far have not always been successful [17]. This applies in the first place to possible partnerships in communal infrastructure (amenities, utilities, solid waste removal and processing, district heating, etc.) [18].

The NGO sector, especially if carries a democratic legitimacy and demonstrates competence, may also play a prominent role in improving development prospects of this region.

4.4 Threats

The key threat pertains to the existing practices in the extraction and processing of lignite and energy generation, should they be kept non-changed and non-improved. Consequently, there is an imperative to accommodate current and future practices in the field to the international documents Serbia has signed recently, and concomitant obligations assumed, especially those pertaining to the macro region of South-eastern Europe [19, 20, 21].

The next imperative goes to a necessity to diversify and ramify the existing economic structure in the region, and to radically depart from its "paleo-industrial" development pattern. Namely, a veritably sustainable development path cannot be imagined without this. Should it happen that the key actors keep to the prevalent existing pattern, this will imply that neither the "territorial capital" of the area is well utilized, nor the negative effects of the past development are removed and/or cleaned.

Apart from the above, a number of other problems should be resolved, in order to prevent the continuation of some unfavorable past and current practices, viz.:

a) The scope of rehabilitation and recultivation works has to be considerably intensified in the years to come, in order to make it for the delays in the past. In addition to this, future recultivation will have to

parallel predictably intensified extraction and processing of lignite.

b) There has been a long-standing problem of contaminated agricultural lands (soils), which seriously hinder the development prospects in this sector. In effect, there is a large number of "ecological hot spots" in this area, and even larger land belts of the kind. This problem has not been taken into account in its all relevance so far.

c) More efforts should be put to educate and train people, in order to fill the now missing qualification brackets (gaps) in the labour force structure. This is of necessity for developing an "economy based on knowledge", that is, for introducing technological innovation. Particularly is missing proficiency in strategic development control and directing, market research, sophisticated management practices, and more developed entrepreneurship and culture.

d) Should the current unemployment rate is radically reduced, it will ultimately limit the development prospects of the "Kolubara" Basin. This is of particular relevance keeping in mind that the pending privatization of a part of publicly-owned enterprises in the mining extraction and energy production sectors will generate a new wave of unemployment, [22] by which the resolving of this problem will be additionally complicated. The problem of unemployment should be dealt with as one aspect and problem only, out of many in the sphere of social cohesion, social deprivation and social polarization, concomitant to the trends of the post-socialist transition [20].

e) Although it is primarily a local (regional) problem, the out-migration of rural population does not seem solvable by the efforts of local and regional actors only. There is a clear need for more determined actions of the Republican level to that end, and for introducing measures that are supportive to local needs and priorities.

f) The existing equipment, installations and machinery should be utilized more intensively, which is of particular relevance regarding that even harsher market competition for the majority of economic actors is likely to take place in the future.

g) A radical improvement of the systems and management practices of water supply is of crucial importance for the development prospects of this region.

h) A number of other, long-existing problems, will also have to be taken into account and resolved, in the first place the following ones: an extensive illegal

construction (building) practices; a lack of by-laws in property (real estate) management, and poor practices in this field; a lack of programmes and projects to better direct and control sustainable development; a lack of appropriate institutional and organizational arrangements at the regional level for strategic development management, etc. [15, 23].

5 Concluding remarks and suggestions

The results presented here are of limited relevance, in the first place for the lack of all necessary data, indicators and other information. Here, of particular importance are the consequences of the pending privatization of a part of the energy sector in Serbia, which are not all ponderable at this point of time, especially regarding the predictable "risk and uncertainty" of the legislative, institutional and other steps to be foreseeably undertaken.

However, some general findings of a preliminary relevance may well be in place here, viz.: (a) In the "Kolubara" Basin there still exist a number of complex problems, mostly those which took place as a consequence of the past development pattern and poor production and environmental protection practices. Apart from that, some problems have been additionally made more complicated by the course of the events of the post-socialist transition, mostly as a result of impact of factors outside the region. Negative aspects, that is, weaknesses and threats, seem prevail over those positive, that is, advantages and opportunities.

The resources and potential have not been utilized in a rational way, and many spatio-ecological negative effects of the past development pattern still exist in this region. The majority of such problems still stay unresolved; (b) Despite that, the negative effects need not appear as an insurmountable factor, provided the comparative advantages of the region are better utilized, and development opportunities are made use of, within an appropriate, new development pattern; (c) As is the case in a number of other similar regions, sustainable development paradigm offers many options for better future development prospects, provide appropriate steps are undertaken, in the first place the following ones: 1) Priority goes to the removing of the already made damages and pollution, 2) The extraction and processing of the key natural resources in the future ought to follow more recent, spatially, ecologically and socially acceptable patterns and practices, notably those from the more

developed countries of the European Union, 3) In order to define and embark upon a new development path, cooperation among various actors is urgently needed, as the key development problems of this region cannot be resolved by the activities of the local (regional) actors only, 4) Finally, introducing a number of new "systemic" measures, favourable also for the local (regional) economy and spatial and urban practices, will also help solve some most urgent problems of this region.

However, for introducing such "systemic" measures, a thorough repairment of the planning system and practice would be needed. The now almost lost legitimacy of planning and environmental policy will not be repaired, unless these disciplines clearly demonstrate that they are able to improve on the existing practice. In addition to this, it is of crucial importance for the future of planning to demarcate its role relative to other mechanisms of overall societal guidance and control. Should planners not succeed in their endeavors, the role of planning is likely to be reduced to a "junior partner" within the emerging institutional arrangements. Planning should serve democratic pluralism and participative democracy. It should also be modernizing and emancipatory, i.e., supportive to the actions of those actors who attempt to change the material (i.e., social, economic, and spatio-environmental) conditions, as well as the established power relations (i.e., the existing socio-political hybrid). Now, opposite to that what has been happening in the planning practice, the planning system is not reflecting the impact of contextual factors, whereby the conundrums of the *Realpolitik* of planning are neglected, and a veritable social and political inquiry is rarely reached [24]. Notwithstanding this, the majority of planners have kept demonstrating an evangelical and bureaucratic zeal and arrogance against the criticism of the "non-consecrated" (i.e., the proponents of "frames" and "narratives" other than the planners).

Consequently, in the field of strategic development planning, Serbia ought to launch the process of complex institutional and organizational adjustments, to ultimately result in the preparation of the new generation of sustainable development documents, compatible with good European standards and practices. Specifically:

The priority future activities should be directed along the line of adjusting to the more general European trends, especially with regard to the institutional and

organizational changes in the system and practice of spatial, urban and environmental planning. In this regard, of priority is to systematically introduce more sophisticated evaluation devices, e.g., TIA (Territorial Impact Assessment), to supplement the existing SEA (Strategic Impact Assessment) and similar methods.

This should parallel a search for a new strategic planning heuristics, compatible to the impact of the key transition factors, that is, privatization, marketization, liberalization, and so forth.

The existing development documents would have to be reworked, and a number of new schemes prepared, applying the more operative and analytical concepts of sustainability. Specifically, a new spatial development plan-strategy of Serbia (instead of that enacted in 1996), as well as a number of related strategic documents, ought to be worked out, based on a rigorous evaluation of the past events and of the current situation.

Apart from that, a whole set of other documents will have to be prepared at the national (state) level, viz.:

- 1) National strategies for cooperation with foreign and other strategic partners regarding the spatio-ecological matters.
- 2) National and regional strategies for protection of bio- and geo-diversity.
- 3) National and regional environmental action plans.
- 4) National strategies for the sustainable utilization of natural resources.

At regional and local levels, priority also goes to the preparation of local agendas of sustainable development, plans of sustainable spatial and urban development, and schemes for establishing and integrating "sustainable business" into local documents.

Regarding the cooperation with its neighbors, more common development schemes of the kind should be prepared.

Of priority is to candidate Serbia to participate in the pan-European research and development programme *ESPON*, as well as to adjust the territorial division of the country with the *EUROSTAT's* system *NUTs*.

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