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## TABLE OF CONTENT

### KEYNOTE PAPERS

|   |  |           |
|---|--|-----------|
| Jelena Bošković   | <b>GENETIC BASE OF PYRAMIDING STRATEGIES FOR DURABLE RESISTANCE TO LEAF RUST OF WHEAT.....</b>   | <b>13</b> |
| Wolfgang Rohrbach   | <b>MEDICAL TREATMENT AND CARE IN DIGITAL ERA.....</b>  | <b>37</b> |
| Enes Huseinagić   | <b>PREPARATION AND PLANNING OF EXPERT STAFF IS ONE OF THE MEANS OF SOLVING UNEMPLOYMENT.....</b> | <b>45</b> |
| Viliana Vasileva, Emil Vasilev, Gordana Dražić, Savo Vučković | <b>NEW TECHNOLOGIES IN FORAGE PRODUCTION AND ENVIRONMENT PROTECTION.....</b>                     | <b>53</b> |
| Vladica Ristić, Amit Vujčić                                   | <b>THE IOT SMART CITY TECHNOLOGY IN TRANSPORT SECURITY IMPROVEMENT.....</b>                      | <b>63</b> |
| Mirko Smoljić   | <b>INTERNAL POLICY ASPECTS OF NATIONAL SECURITY.....</b>   | <b>70</b> |
| Juan Sánchez Monroe, Dobrica Vesić                            | <b>THE INTERNATIONAL COOPERATION IN THE SUPPRESSION OF TERRORISM.....</b>                        | <b>82</b> |

### A SCIENCE, TECHNOLOGY AND INNOVATION

|  |   |            |
|--|---|------------|
| Milena Premovic, Yong Du, Yuling Liu, Peng Deng, Huixin Liu                                | <b>KINETIC DATASET FOR THE CU-RICH FCC CU-AL-SN ALLOYS .....</b>            | <b>95</b>  |
| Milena Premovic, Yong Du, Duško Minić, Shuhong Liu, Tamara Holjevac Grguric                | <b>THERMODYNAMIC DESCRIPTION OF THE TERNARY BI-NI-ZN SYSTEM.....</b>        | <b>107</b> |
| Milena Premović, Milan Kolarević, Aleksandar Đorđević, Tao Xiaoma, Pavel Brož              | <b>MECHANICAL AND ELECTRICAL PROPERTIES OF TERNARY CU-NI-ZN ALLOYS.....</b> | <b>119</b> |
| Milan Milosavljević, Aleksandar Đorđević, Duško Minić, Milena Premović, Dragan Manasijević | <b>EXPERIMENTAL INVESTIGATION OF THE TERNARY GE-IN-ZN.....</b>              | <b>131</b> |



|  |            |
|--|------------|
| Aleksandar Đorđević, Duško Minić, Milena Premović, Milica Tomović,<br>Vladan Čosović   |            |
| <b>INVESTIGATION OF THE TERNARY GA-GE-ZN SYSTEM.....</b>   | <b>142</b> |
| Ivana Jelić, Marija Šljivić-Ivanović, Slavko Dimović, Mihajlo Jović, Ivana Smičiklas   |            |
| <b>UTILIZATION OF CONSTRUCTION AND DEMOLITION WASTE.....</b>   | <b>153</b> |
| Jovana Bošnjaković, Ivana Jelić, Velimir Komadinić   |            |
| <b>SUSTAINABLE ASPECTS OF BIOCOMPOSITE MATERIALS -<br/>    A REVIEW.....</b>   | <b>165</b> |
| Sergej Vukša, Slavko Nešić   |            |
| <b>COMPOSITES AND INNOVATIVE MATERIALS IN<br/>    ARCTIC OFFSHORE CONDITIONS.....</b>  | <b>172</b> |
| Vjekoslav Budimirović, Nebojša Budimirović   |            |
| <b>FUZZY VARIETIES.....</b>  | <b>182</b> |
| Vladica Ristić, Milica Vukić, Jelena Bošković  |            |
| <b>THE IMPACT OF HAARP SYSTEM ON CLIMATE CHANGE AND<br/>    SUSTAINABLE AGRICULTURE.....</b>                                   | <b>192</b> |
| Radivoj Prodanović, Maja Ćirić, Radovan Vladisavljević, Svetlana Ignjatijević  |            |
| <b>INTEGRATING ICT IN THE DEVELOPMENT OF COMPARATIVE<br/>    ADVANTAGES OF FOOD PRODUCTS.....</b>                              | <b>203</b> |
| Ljubica Šarčević-Todosijević, Aleksandar Stevanović, Jelena Bošković   |            |
| <b>MICROBIOLOGICAL CORRECTNESS - PRIORITY IN HEALTH<br/>    SAFE FOOD PRODUCTION.....</b>                                      | <b>212</b> |
| Vlado Radić, Nikola Radić  |            |
| <b>DEVELOPMENT INDUSTRY 4.0 IN KNOWLEDGE ECONOMY.....</b>  | <b>220</b> |
| Ana Globočnik Žunac, Ana-Mary Posavec, Vlatka Kordoš   |            |
| <b>CONFLICT MANAGEMENT TECHNIQUES IN BUSINESS<br/>    ORGANIZATIONS.....</b>   | <b>232</b> |
| Branko Babić   |            |
| <b>WHAT HAPPENS TO AUTHORS OF INNOVATIONS THAT<br/>    COULD CHANGE THE WORLD AND WHO CONTROLS<br/>    NEW TECHNOLOGY.....</b> | <b>245</b> |

## **B EDUCATION AND KNOWLEDGE FOR 21 CENTURY**

|  |            |
|--|------------|
| Božidar Trifunov Mitrović  |            |
| <b>TWO CIVILIZATIONS IN EUROPE.....</b>  | <b>267</b> |
| Krsto Mijanović, Marko Jukić, Jefimija Mijanović- Jukić  |            |
| <b>EDUCATION FOR SUSTAINABLE DEVELOPMENT.....</b>  | <b>288</b> |
| Marina Guzovski  |            |
| <b>THE INFLUENCE OF INFORMATION AND COMMUNICATION<br/>    TECHNOLOGY IN TEACHING ON MOTIVATION TO LEARN.....</b> | <b>296</b> |
| Murat Bilgin   |            |
| <b>EVALUATION OF INTERNATIONAL LAW EDUCATION IN<br/>    PERSPECTIVE OF ACADEMICIANS AND FIELD EXPERTS.....</b>   | <b>304</b> |



|   |   |            |
|---|---|------------|
| Slobodanka Đolić                                    | <b>WORLD ENGLISH AND ITS REFLECTION TO<br/>EDUCATION IN SERBIA.....</b>   | <b>311</b> |
| Dragana Spasić                                      | <b>A WORD AS A LINGUISTIC UNIT.....</b>   | <b>324</b> |
| Aleksandra Pavić Panić                              | <b>THE ROLE OF COMMUNITIES OF PRACTICE IN<br/>LANGUAGE AND GENDER RESEARCH.....</b>   | <b>332</b> |
| Nataša Lukić  | <b>ADVANTAGES AND DISADVANTAGES OF COMMUNICATIVE<br/>APPROACH AND GROUP WORK IN TEACHING ENGLISH AS<br/>A FOREIGN LANGUAGE.....</b> | <b>340</b> |
| Sabina Zejnelagić                                   | <b>TECHNOLOGY AS A USEFUL TOOL IN A LANGUAGE<br/>ACQUIRING PROCESS.....</b>   | <b>351</b> |
| Lidija Beko, Dragoslava Mićović, Nailje Malja Imami | <b>SUPPORTING THE DEVELOPMENT OF THEORY OF PRACTICE<br/>IN CLIL CLASSROOM IN HIGHER EDUCATION - A CASE<br/>STUDY OF FMG.....</b>    | <b>360</b> |
| Ljubica Šarčević-Todosijević                        | <b>METHODICAL-DIDACTIC ANALYSIS OF A BIOLOGY<br/>TEACHING LESSON ON TOPIC "MUSHROOMS" IN AN<br/>OBSERVATIONAL CLASS.....</b>        | <b>367</b> |
| Jelena Rajović, Marija Vuković                      | <b>THE IMPORTANCE OF NEEDS ANALYSIS IN ESP CURRICULUM<br/>DEVELOPMENT FOR VOCATIONAL SECONDARY SCHOOLS.....</b>                     | <b>374</b> |
| Marija Simić  | <b>THE CHALLENGES OF CHILDREN AND YOUNG IN<br/>MUSIC EDUCATION.....</b>   | <b>384</b> |
| Slobodan Milić                                      | <b>THE INFLUENCE OF THE MASS MEDIA ON EDUCATION.....</b>  | <b>393</b> |

## **C PRESERVATION AND IMPROVEMENT OF ENVIRONMENT AND HEALTH**

|   |   |            |
|---|---|------------|
| Gordana Dražić, Nikola Dražić, Vuk Gajić  | <b>NEW ECOTECHNOLOGIES FOR WASTE REUSE IN SUSTAINABLE<br/>HOSPITALITY.....</b>                  | <b>405</b> |
| Marija Šljivić-Ivanović, Ivana Jelić, Slavko Dimović,<br>Mihajlo Jović, Ivana Smičiklas | <b>RADIOACTIVE SOIL CONTAMINATION AND REMEDIATION.....</b>                                      | <b>414</b> |
| Marina Nenković-Riznić, Boško Josimović, Danijela Božanić                               | <b>SEA AS A CONTROLLING INSTRUMENT IN PREPARATION OF<br/>NATIONAL STRATEGIES IN SERBIA.....</b> | <b>423</b> |
| Jelena Mladenović, Vladica Ristić, Jelena Bošković                                      | <b>THE MAGNIFICENT FIVE.....</b>  | <b>433</b> |





|   |            |
|---|------------|
| Ivana Plečić; Aleksandar Radenković, Marina Vuković   |            |
| <b>NEW TECHNOLOGIES FOR ENVIRONMENTAL PROTECTION -<br/>CONSTRUCTED WETLANDS IN THE ZASAVICA.....</b>  | <b>441</b> |
| Dragan Bataveljić   |            |
| <b>GLOBAL CLIMATE CHANGES AND THEIR INFLUENCE ON<br/>THE ENVIRONMENT PRESERVATION AND HEALTH<br/>PROTECTION.....</b>                              | <b>453</b> |
| Boro Vujašin  |            |
| <b>HUMAN POPULATION ON THE BORDER OF OUR SURVIVAL.....</b>  | <b>465</b> |
| Aleksandar Stevanović, Jelena Bošković, Ljubica Šarčević-Todosijević  |            |
| <b>THE IMPORTANCE OF ORGANIC PRODUCTION IN THE<br/>PROTECTION OF HUMAN HEALTH, BIODIVERSITY AND<br/>ENVIRONMENT.....</b>                          | <b>475</b> |
| Marina Nenković-Riznić, Borjan Brankov, Mila Pucar, Snežana Petrović  |            |
| <b>ESTABLISHING HOSPITALS` DISASTER RESILIENCE ON<br/>THE CASE OF HEALTHCARE INSTITUTIONS OF<br/>SMALL CAPACITY.....</b>                          | <b>483</b> |
| Nenad Bingulac  |            |
| <b>MISDEMEANOR PENAL POLICY FOR INDIVIDUALS BY<br/>LAW ON ENVIRONMENTAL PROTECTION.....</b>   | <b>492</b> |
| Tanja Kvesić, Jelena Bošković   |            |
| <b>MONITORING OF WATER QUALITY PARAMETERS IN<br/>VOJVODINA.....</b>   | <b>500</b> |
| Milica Vukić, Jelena Bošković, Vladica Ristić   |            |
| <b>REMOVAL OF ARSENIC FROM UNDERGROUND WATER AND<br/>DRINKING WATER USING ADSORPTION PROCESSES AND<br/>COMMERCIALY AVAILABLE ADSORBENTS.....</b>  | <b>509</b> |
| Milutin Đuričić, Milan Đuričić, Zorana Nikitović  |            |
| <b>POSSIBILITIES OF PROTECTING THE ENVIRONMENT ON THE<br/>EXAMPLE OF REDUCING AIR POLLUTION IN THE CENTRAL<br/>ZONE OF THE CITY OF UZICE.....</b> | <b>520</b> |

## **D GOVERNANCE AND SUSTAINABLE TERRITORIAL DEVELOPMENT**

|  |            |
|--|------------|
| Vladica Ristić, Marija Maksin  |            |
| <b>STRATEGIC PLANNING OF SUSTAINABLE URBAN<br/>DEVELOPMENT IN SERBIA.....</b>                                | <b>535</b> |
| Slavka Zeković   |            |
| <b>A PROPAEDEUTICS IN SERBIA'S NEW INDUSTRIAL POLICY AND<br/>ITS IMPACTS ON TERRITORIAL DEVELOPMENT.....</b> | <b>549</b> |
| Jasmin Latović   |            |
| <b>THE EUROPEAN UNION AND BREXIT DEAL WITH THE UNITED<br/>KINGDOM FROM A LEGAL POINT OF VIEW.....</b>        | <b>563</b> |



|  |            |
|--|------------|
| Milan Gligorijević, Aleksandar Maksimović  |            |
| <b>ROLE AND IMPORTANCE OF INFORMATION SECURITY<br/>SYSTEM IMPLEMENTATION IN THE REALIZATION OF<br/>THE "SMART CITY" CONCEPT.....</b> | <b>567</b> |
| Igor Jokanović   |            |
| <b>IMPROVED MOBILITY FOR SUSTAINABLE DEVELOPMENT.....</b>  | <b>576</b> |
| Boryana Nozharova, Peter Nikolov   |            |
| <b>HUMAN SCALE AND PEDESTRIAN CONNECTIVITY BETWEEN<br/>PUBLIC SPACES.....</b>  | <b>597</b> |
| Jovan Rudež, Nebojša Pavlović, Vladan Petrović   |            |
| <b>ECONOMIC EFFECTIVENESS OF LOCAL PLANNING AND<br/>DECISION-MAKING SYSTEM IN PUBLIC PROCUREMENT<br/>PROCESS.....</b>                | <b>608</b> |

## **E NATIONAL SECURITY AND PROTECTION**

|   |            |
|---|------------|
| Slavko Vukša, Tatjana Živković  |            |
| <b>NATIONAL SECURITY IN THE WORLD OF GLOBALIZATION.....</b>                                   | <b>623</b> |
| Tatjana Gerginova   |            |
| <b>COMPONENTS OF NATIONAL SECURITY.....</b>   | <b>632</b> |
| Olgica Vulević, Slaviša Đukanović, Milan Gligorijević   |            |
| <b>INTEGRAL NATIONAL SECURITY AND ORGANIZED CRIME.....</b>                                    | <b>641</b> |
| Nikola Radić, Vlado Radić   |            |
| <b>FOREIGN DIRECT INVESTMENTS IN SERBIA'S DEFENSE<br/>INDUSTRY AND NATIONAL SECURITY.....</b> | <b>651</b> |



## SEA AS A CONTROLLING INSTRUMENT IN PREPARATION OF NATIONAL STRATEGIES IN SERBIA

*Marina Nenković-Riznić<sup>9</sup>; Boško Josimović<sup>10</sup>; Danijela Božanić<sup>11</sup>*

### Abstract

The Strategic Environmental Assessment (SEA) represents the valuation of potentially significant impacts of plans or strategies on the environment, and the specification of measures for the prevention, minimization, mitigation, remediation or compensation of adverse impacts on the environment and human health. Adopted national strategies in Serbia were not always followed by adequate control provided by SEA, but this practice is changing in recent years. Serbian Climate strategy with Action Plan (still in the process of adaptation by the Government) has opened new chapter in the participative planning process, since the overall process of strategic planning within Climate strategy was followed by perpetual evaluation of proposed scenarios and mitigation and adaptation measures. All phases of the process were monitored and evaluated by the Working group of stakeholders from relevant institutions. For the first time in the Serbian planning practice the Scoping report was prepared, within the process of SEA. This report is obliged by EU directives, but not by Serbian law. Nevertheless, it has made a great improvement of the overall SEA and Strategy process, since it was served as a filter for non-adequate measures given within the Strategy. Having that in mind, this paper will present results of that new practice and methodological improvement of SEA process in evaluation of national strategies in Serbia.

Key words: *SEA, climate change, mitigation, adaptation, Serbia*

### Introduction

Strategic Environmental Assessment (SEA) is a process in which the goals and principles of sustainable development are integrated into different plans and strategies, with the aim of completely preventing or limiting negative impacts on the environment, human health and quality of life, biodiversity, geodiversity and natural and immovable cultural assets[1]. The SEA identifies the effects of broader

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relevance (cumulative and social), establishes frameworks for analyzing the impact of specific projects, including prior identification of problems and impacts that deserve a higher level of detail in research; establishes a hierarchical framework for further implementation of the process and activities of environmental protection in the area of interest; and allows variant elaboration of strategic and/or planning solutions. In addition, SEA helps to check the benefits of different development concepts, avoids the constraints that arise when assessing the environmental impact of an already defined project, and identifies the appropriate context for analyzing the impact of specific projects, including prior identification of problems and impacts that deserve more detail [1-5].

The SEA denotes valuing potentially significant environmental impacts of plans and programs in different areas, as well as setting up the measures of prevention, minimization, mitigation, remediation or compensation of harmful impacts of the activities envisaged in strategic and planning documents on the environment and human health. Applying the SEA in the planning opens the space for examining the generated changes in space and considering the needs of the environment in question, within which all the activities foreseen by the plans and strategies shall be critically examined from the point of view of environmental impact and subsequently the decision shall be made whether the implementation of the Strategy will be proceeded with and under which conditions, or on the other hand, the planned activities will be abandoned [5].

Adopted national strategies in Serbia were not always followed by adequate control provided by SEA, but this practice is changing in recent years [6-8].

Serbian Climate strategy with Action Plan (2019, but still in the process of adaptation by the Government) has opened new chapter in the participatory planning process, since the overall process of strategic planning within Climate strategy was followed by perpetual evaluation of proposed scenarios and mitigation and adaptation measures. The project "Climate Strategy and Action Plan"<sup>12</sup> was financed by the European Union from Instrument for Pre-Accession (IPA) [9]. The goal of the project was to prepare the national cross-sectoral Climate Change Strategy with the Action Plan by the Ministry of Environmental Protection of the Republic of Serbia, all-together with the document of the SEA. The Strategy is establishing the national strategic and political framework of fight against climate change in accordance with Serbia's international commitments and its objectives of reducing GHG (Paris Agreement and EU Accession). Having in mind that all of the strategic documents should be followed by the SEA (in accordance with the The Law on Strategic Environmental Impact Assessment („Official Gazette of RS“, No. 135/2004 and 88/2010)), Strategy with AP was going through process of adoption with the SEA.

### **Climate strategy and SEA - relations, conflicts, harmonisations**

The impacts and risks of climate change to Serbia's sustainable development are evident: they could jeopardize infrastructure, agricultural productivity, water availability and public health. All of these impacts could lead to serious

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<sup>12</sup> Hereinafter referred to as: the Strategy and AP



deterioration of the environment and human health. The latest data show an average temperature increase of 0.36°C per decade between 1961 and 2017, while climate change scenarios predict an increase between 2°C and 4.3°C by 2100, compared to the period 1986-2005 [9]. Average precipitation decreased up to 10% between 1961 and 2017, while according to the climate change scenarios the average yearly precipitation may decrease up to 4.5% by 2100 compared to the reference period 1986-2005. According to the Paris Agreement [10], Serbia pledged “to reduce GHG emissions by 9,8% until 2030 compared to emissions in 1990”. The Paris Agreement requires countries to revise and update their NDCs periodically, (starting from 2020) progressively increasing their ambitions/GHG emission reduction commitments [9]. Therefore, the first goal of the Strategy was to support Serbia in the fulfillment of its commitments under the Paris Agreement.

The Strategy and the Action Plan have identified the priority measures to reduce GHG (mitigation) and the competent authorities, as well as the timeframe for the implementation and total necessary financial resources. Potentials for a cost-effective and long-term reduction of GHG emissions in relevant economy sectors in Serbia have been identified and assessed – by 2020, 2025, 2030 and 2050 (scenarios).

The Strategy is providing increased resilience to climate change impacts (food production – agricultural sector, bioenergy – forestry and hydroelectricity – water management).

In these terms, SEA on Strategy and action plan defined the criteria for setting the possibilities of important environmental impacts of different scenarios of the Strategy. These criteria were based on the characteristics of the Strategy and the characteristics of the impacts.

In the specific case, in addition to those criteria, a particularly important item is the identification of problems of environmental protection at the area which directly affected by energy power plants, as the major GHG emitters and activities and analysis of possible implications of those activities on the quality of the environment, and in particular on the following areas:

- Quality of basic environmental factors: air, water, land (agricultural and forest land),
- Natural resources,
- Health of population and social development [11].

Although the focus of the SEA was on these activities and facilities, all strategic guidelines were analysed from environmental and social and economic aspects (such as projects in infrastructure and measures to increase energy efficiency) defined in the Strategy, including impacts (positive and negative) of the so-called “green” energy obtained from renewable sources.

Based on the assessment of environmental situation at the area covered by the Strategy, the following questions were particularly examined:

- The problem of future construction of new heat power plants and putting the existing heat power plants out of service
- Potential problems in biodiversity that may occur as a result of increase in production of electrical energy from RES (wind farms, photovoltaic plants, biogas electric power plants etc.)



- Threatened nature and environment in the radius of the open-pit mining Drmno-Kostolac (due to extension of capacity) and new mining sites in the Kolubara region
- Poor infrastructure for collecting, treatment and disposal of utility waste at the territory of Serbia,
- Insufficient investment in environmental protection and climate change,
- Underdeveloped climate change and environment monitoring system and changes in space at the national level, lack of a program of monitoring of the environmental situation and climate change and IT system at entire territory of Serbia, which is the subject of this Strategy.

Based on these specific problems/questions, SEA set the general and specific objectives (in the following area: air and climate change, water, soil, natural resources, cultural and historical heritage, waste, socio economic aspects and institutional development) as well as the connected indicators in order to evaluate every specific impact that can lead to potential harm on environment and on human health [11]. All of these goals were set in accordance with the previously established methodology used for the different purposed SEA [3, 5, 6], and adopted in accordance with the specific activities given within the SEA

These objectives served as instrument of evaluation of the different scenarios/alternative solutions given within the Strategy and AP.

The scenarios are defined for each of the following years – 2020, 2030 and 2050, with prospects by 2070, and were elaborated on three models with data pertaining to or data adapted to Serbia: PRIMES GEM-E3 suite; CAPRI and IPCC Waste Model.

The analysis of the main sources of GHG emissions in Serbia, according to the IPCC (Intergovernmental Panel on Climate Change) methodology, shows that over 90% of emissions in Serbia are included in these models, which suggests that all main sources were considered [11].

Two baseline scenarios were developed including all measures implemented by 2015, assuming that no new measures will be applied in the future. Therefore, these scenarios are also referred to as scenarios that do not include the implementation of European Union (EU) policies, ie the Emissions Trading System (ETS), although a number of national policies, (as described in the National Action Plans<sup>13</sup>), are inspired by EU policies and measures implemented in specific sectors.

## **Process of the SEA**

There were several stages in the process of SEA, which are not standard practice in Serbia, and not directly obliged by the Serbian law.

Namely, The Law on Strategic Environmental Impact Assessment („Official Gazette of RS“, No. 135/2004 and 88/2010), and the Law on Environmental Protection (“Official Gazette of RS“, No. 135/2004, 36/2009, 72/2009, 43/2011, 14/2016 and 76/2018) envisage the implementation of the publicity principle – in order to inform the public on particular plans and programs and their possible impact on the

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<sup>13</sup>Energy efficiency Action Plan of Republic of Serbia (EEAP) and National Renewable Energy Action Plan (NREAP)



environment and also to ensure full openness of the preparation process and adoption or adoption of plans and programs. In this context, before the adoption of any decisions as well as after the adoption of plans and programs, the public should have the access to information related to those plans and programs as well as their amendments.

But for the purpose of this Strategy, within the SEA, two basic stages were implemented: 1) drafting the Scoping report that included analysis of main topics, scenarios and environmental goals and indicators as well as assessment methods. This stage is not formally designed by the provisions of the Law on Strategic Environmental Impact Assessment in the Republic of Serbia; and 2) SEA Report displaying the situation of the environment and setting the possible important partial and aggregate impacts of implementation of plans and programs on environmental elements, and it also argues acceptable alternatives. This stage is formally laid down in the provisions of the Law on Strategic Environmental Impact Assessment in the Republic of Serbia.

Good international practice and EU Directives (Directive 2001/42/EC on the assessment of the effects of certain plans and programmes on the environment (SEA Directive) implies the involvement of stakeholders at the very early phase of designing planning, programing or strategic determinants, when all options are open [12-14]. This also means involving stakeholders that are already included at the Scoping Report stage. In this context, during the process of developing the SEA for the Climate Change Strategy & Action Plan, the process of involving the public was carried out in the Scoping Report stage. This stage included several activities given within the table 1.

Table 1: Activities of involving the public in the Scoping Report stage

| Description of activity  | Stakeholders  |
|--|---|
| Workshop on the Scoping Report   | Stakeholders from various institutions directly linked with environmental protection (ministries, institutes, NGOs, representatives of academic community, public enterprises etc.) |
| Information on the Scoping Report                                      | Stakeholders (list with 400+ stakeholders) informed electronically on the period of participation of the public related to the Scoping Report                                       |
| Public hearing on the Scoping Report                                   | Stakeholders (list with 400+ stakeholders) informed electronically on the period of participation of the public related to the Scoping Report                                       |
| Presentation of the Scoping Report to the Working group of the project | Members of the Working group  |

During the public hearing the general public submitted their objections, proposals and comments to the Scoping Report. The comments, proposals and objections were submitted in writing and the processing person recorded each comment and considered whether it is justified and provided a response and a justification. Some of the comments and suggestions were incorporated in the final text of the Scoping report of the Strategic Impact assessment. This relates primarily to suggestions in terms of objectives and indicators of the Strategic Impact Assessment.



In addition to this consultation, an extensive round of consultation was conducted also with stakeholders and competent bodies and authorities in the development of the Strategy and the implementation of the Strategic Assessment; this resulted in the data, conditions and opinions obtained.

First public participation elaborated general SEA objectives, specific SEA objectives as well as indicators proposed by the SEA team [11]. During the public consultation some of the specific goals were changed, and some of the indicators were omitted or fine-tuned which has served as the excellent base for the next phase of scoping report – preliminary evaluation.

In the Scoping report phase, SEA has evaluated two different scenarios (so called baseline scenarios for the years 2020, 2030, 2050 and 2070 in terms of GHG emissions from the different sectors.

Baseline scenarios were considered without and with additional measures. It should be noted that none of these two baseline scenarios fully takes into account the transposition of the climate and environmental EU Acquis, and could therefore be considered as "non-EU scenarios".

Both scenarios include adopted national policies and measures in Serbia ending with December 2015.

Taking into account the main SEA objective which involves environmental protection and ensuring implementation of sustainable development strategy, it was necessary to obtain an assessment result regarding the possible significant impacts of different scenarios implementation, which will be considered as baseline, and then identify the scenarios, and finally propose mitigation measures to minimize or avoid the negative impacts of those scenarios.

Every processed sector within the baseline scenarios in the Strategy (energy sector, forestry, industrial processes, waste management and agriculture) is valued separately, in relation to previously defined strategic assessment objectives. This allows appropriate assessment of positive and negative impacts of selected alternatives (previously explained and elaborated scenario B1 and scenario B2).

Within the Scoping report of the SEA, policy measures recognized by the Strategy were evaluated in several different sectors: electricity production from fossil fuels, electricity production from renewable energy sources, district heating infrastructure, electricity transmission and distribution infrastructure, natural gas infrastructure, coal infrastructure, energy efficiency measures in the residential and public civil engineering sector, energy efficiency measures in the industrial sector, energy efficiency measures in the transport sector, energy measures in the electricity production sector and incentive measures in relation to renewable energy sources.

Policy measures were evaluated through the impact scope assessment criteria (Table 2), spatial distribution assessment criteria (Table 3) and Impact probability (Table 4).

Table 2: Impact scope assessment criteria

| Scope of impact | Mark | Description                               |
|-----------------|------|---|
| Critical        | - 3  | Prevents functioning in a given area      |
| High            | - 2  | Largely nuisance to the environment       |
| Low             | - 1  | Slightly nuisance to the environment      |
| No impact       | 0    | No changes to the environment             |
| Positive        | + 1  | Small positive changes to the environment |





| Scope of impact | Mark | Description  |
|-----------------|------|--|
| Favourable      | + 2  | Favourable changes to the environment                  |
| Very favourable | + 3  | Changes that significantly improve the quality of life |

Table 3: Spatial distribution assessment criteria

| Impact significance | Mark | Description                                     |
|---------------------|------|---|
| Transboundary       | T    | Potential transboundary impact                  |
| National            | N    | Potential impact at the national level          |
| Regional            | R    | Potential impact in a region                    |
| City/Town           | C/T  | Potential impact in a city/town                 |
| Local               | L    | Potential impact in special zone of a city/town |

Table 4: Impact probability

| Impact probability | Rank                       |
|--------------------|----------------------------|
| 100% - CC          | Certain consequences       |
| 50% - PC           | Probable consequences      |
| 50% - LPC          | Less probable consequences |
| 1% - CE            | Consequences excluded      |

Results of the obtained evaluation were presented on the four different workshops and meetings,, which led to fine tuning of the proposed policy measures.

Policy measured were changed in accordance with the evaluation from the SEA, and as such served as a basic mitigation scenario (M1) within the SEA.

In the SEA evaluation process, beside these evaluations, three different mitigation scenarios were evaluated, namely:

- M2 scenario: Implementation of all EU acquis in whole is transposed and implemented, achieving 33% GHG emissions compared to 1990; 28,9% RES by 2030 and 24,5% enhanced energy efficiency , as the Serbian contribution to the EU
- M3 scenario: Serbia individually achieves the EU 2030 targets (meaning -40% GHG emissions compared to 1990; 32% RES by 2030 and 32,5% enhanced energy efficiency)
- M4 scenario: Serbia achieves 80% GHG cuts in 2050 compared to 1990 levels (aligned with the European Commission communication on climate neutrality). This mean 80% GHG cuts in 2050 compared to 1990 levels.

Mitigation Scenarios 3 and 4 (M3 and M4) have been set based on stakeholder opinions. An approach to these scenarios for mitigating impact on stakeholders was discussed at the meeting of the project's Working Group and at the project's Steering Committee. Modeling results show that Serbia has significant potential for climate change mitigation. By 2030, emissions may be reduced between 33% and 40%, while in 2050 this reduction may rise to 80% [9], [11].

Based on the aggregate evaluation of the impact of different mitigation scenarios on all areas of strategic impact assessment, it was concluded that scenario M1 (B2 + EU ETS) can have a greater negative impact on the environment in almost all areas.

The M2 scenario also has a positive impact in almost all sectors, but the general evaluation showed that it was slightly worse than the M3 and M4 scenarios, especially in the energy sector and partly in industrial processes. Less favorable impacts in the industrial and energy sectors have regional dispersion and negative



impacts, which requires the implementation of mitigation / neutralization measures prescribed by this strategic assessment.

In this regard, the scenarios M3 and M4 have by far the most positive environmental impact, but their real feasibility must be evaluated through other analyzes (primarily economic and then social).

It can be concluded that the implementation of the M3 and M4 Strategy scenarios would be exclusively positive in relation to all SEA objectives. The major contribution of the M3 and M4 mitigation scenarios is reflected in the reduction of GHG emissions into the air, which as a result has a number of positive effects (direct and indirect) on environmental factors and elements of sustainable development.

In this regard, SEA has proposed scenario M3 and M4 as most favourable.

Through whole evaluation process, all of the relevant stakeholders were directly involved in elaboration and discussion on the evaluated scenarios, which was the pioneer practice in the Republic of Serbia, where stakeholders are engaged only in latest phase of the adaptation of the SEA.

## Conclusion

Although Serbian planning practice does not recognize early involvement of the stakeholders in the process if the SEA, there are new pioneer steps towards the its`improvement. Serbian Climate change Strategy and Action plan (which will be adapted in 2020) represents an important step forward in participatory planning in Serbian theory and practice.

Involvement of all the stakeholders that are directly involved in the subject of reducing GHG emissions in Serbia has made a great improvement of the overall SEA and Strategy process, since it was served as a filter for non-adequate measures given within the Strategy. Having that in mind, this paper has presented results of new practice and methodological improvement of SEA process in evaluation of national strategies in Serbia.

Since the Republic of Serbia is preparing for the new round of strategies in different sectors (nature conservation, waste, forestry, agriculture etc.) from 2020-2025 and having in mind newly adopted Law on planning system ("Official gazette of the Republic of Serbia", No. 30/2018), recommendations on active involvement of different stakeholders from the early stage of planning process could serve as an excellent base for the future preparation of the national strategic documents.

Also, the experience gained from the preparation of these documents can also serve as a basis for changing the existing legal framework in the field of SEA and environmental impact assessment.

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