



## Review Article

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# Environmental Impact of Illegal Construction, Poor Planning and Design in Western Balkans

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## Abstract

In Belgrade, Republic of Serbia, on October 10 - 11, 2019, international conference "Environmental Impact of Illegal Construction, Poor Planning and Design - IMPEDE 2019". Regionally oriented, fully interdisciplinary conference have encouraged papers in all technical areas, as well as all the other related fields: e.g. from economy to medicine and law. Review paper presents mayor contributions and conclusions of IMPEDE 2019.

**Keywords:** Western Balkans environmental problems; Illegal housing and industrial objects; IMPEDE 2019 conference

## Introduction

In Belgrade, Republic of Serbia, at the premises of the Nikola Tesla House, on October 10 - 11, 2019, the regional international scientific conference Environmental Impact of Illegal Construction, Poor Planning and Design - IMPEDE 2019 was held.

The fully interdisciplinary conference have encouraged papers in the area of environmental protection, forestry, agriculture, architecture, construction, transportation, urban planning, electrical engineering, energetics, machine engineering, mining, geology, material science, chemical technology, metallurgy, law, economics, socio-economic interactions, security studies, applied natural sciences and other scientific areas. Aims of the conference were:

- Presentation of case studies of the illegal construction, poor planning and design impact on the environment, in all areas of engineering including legal, economic, sociological, medical, and security aspects.
- Analysis of illegal construction key drivers.
- Proposals of possible solutions for elimination or substantial reduction of illegal construction causes and poor design.
- Exchanging ideas and proposals for systematic changes at the international level – improvements that are able to eliminate the endangering of environment by illegal construction.

- Interdisciplinary opinions exchange among different engineering areas as well as economic, legal and medical professions.
- Definition of significant conference conclusions.

Conference acronym and motto – IMPEDE – (to prevent someone or something by obstructing them) was a paraphrase of the goal “to establish proactive academic dialogue in society aiming to prevent future negative environmental effects”.

Some one hundred participants, mainly from Serbia, Northern Macedonia, Montenegro, Bosnia and Herzegovina and Croatia, have presented 56 papers related to the following basic topics:

- The influence of illegal construction on the environment: case studies, impacts and consequences.
- Analysis and problems of planning (strategies, plans, regulations) and design and their impact on the environment: case studies, natural and “generated” resources, air, flora and fauna, loss of biodiversity, land use, water resources, flood defense systems, transportation and other infrastructural systems, lack and protection of green surfaces, agricultural and construction land, food, energy, overpopulation, etc.
- Environmental impact assessment studies: problems and practical applications, quality of life of the population in illegally constructed buildings and quarters, priorities in

problem solving, public, environmental and occupational health, sustainable development, and cleaner production.

- Technical documentation, revision and technical control, inspection services, safety (security) of technological processes, contributions to best available techniques, modern technologies of final treatment, reduction or elimination of toxic substances, methods of improvement of illegally constructed housings to achieve an acceptable level (reconstruction, adaptation, removal).
- Legal and socio-economic framework, strategic suggestions for specific problem solving, transposition of EU legislation in the area of environmental protection, economic instruments for environmental protection, fees, stimulations, circular economy, socio-economic problems, transparency and public participation, examples from practice.

Aim of this paper is to present mayor conference contributions and conclusions.

### IMPEDE 2019 Contributions

From the perspective of developed countries illegal construction is rather unimportant or small deviation in normal building procedures, that is fully under control of their legal entities. In Western Balkans counties, after the dissolution of Yugoslavia, some 25-30 years ago, huge movements of people occurred, with the effect in huge illegal construction of homes and industrial objects, producing significant negative effect on the environment. Therefore, in future, urban planning should be well prepared and agile, emphasizing the need for strategic participatory intervention and well-targeted public assistance [1-4]. It should be noted that the driving force for illegal construction in Western Balkans today is not social, but pure economic interest in avoiding paying adequate taxes and contributions to the state, expecting to be pardoned.



**Figure 1:** Individual benefit and immeasurable social damage [5,7].

Illegal construction produces individual benefit and immeasurable social damage, being a form of social deviance as it is presented on the Figure 1 (a. Illegal restaurant on the top of the mountain natural park Kopaonik, b. and c. Illegal houses inside the drinking water collection area in Belgrade and Gruza) [5-7].

Among IMPEDE 2019 conference contributions, numerous regional case studies, with negative environmental impact, were presented, aiming to prevent its repetition or propose proactive action which should eliminate its cause [7-13]. Some papers have presented new BAT technologies and solutions [for example 14],

and some have pointed out on the neglected causes on citizens' health, for example impact of noise and asbestos [15,16].

Scientific societies and professional organizations often point out the problem of poor preparation, design and execution of projects in region, which besides being late and very expensive, often result in damage on environment. In that aim, huge negative environmental impact of small hydroelectric power plants (SHPPs) erection in mountainous areas of the region, has been analysed [9,10].



**Figure 2:** A hundred years old Cypress Park destroyed in Bar, Montenegro [19].

Solutions in implementation of EU environmental guidelines and directives are often formal, aiming to adopt certain legislation (plan, strategy, law, ordinance, rule book etc.) without developing adequate implementation projects. A need of modern project

management and risk methodology and techniques has been emphasized [17,18].

Authors of the conference have stressed the need that public participation should not be an elusive concept, or a decorative

element of the planning process. It should be substantial and performed according to the specific needs of related public [19,20]. To join forces against environmental problems citizens are joining social groups, mainly using Facebook, Twitter and Instagram, reaching followers numbers comparable to the ones of the public media and political parties [21].

#### IMPEDE 2019 conclusions

Conference ended in vivid few hours discussion aiming to propose conclusions, as follows:

1. Illegal construction, especially its negative impact on the environment, is a decades-long problem in the region, which is not solved fully or at all. At the same time, regional state authorities are constantly stating that the problem of illegal construction is formally completely and permanently resolved, unfortunately with little or no success in practice.

2. Insufficient planning of state entities (strategies, plans, regulations) and public enterprises (projects), their inadequate implementation and, often, wrong decisions of state institutions, have an overall negative impact on the environment in the region.

3. Formally, and often inappropriately, communicating with the interested public results in decision-making and the realization of ideas that are in contrary to social needs. Perception of this situation in the public is constantly worsening.

4. In most cases, public authorities do not use the method of proactive approach in solving problems, but reactively addresses them based on public comments, only if they increase sufficiently (eg. noise, urban traffic, greenery, waste, air pollution, protection of water sources etc.).

5. Disputes and ineffective inspection services, their mutual non-cooperation ("not in our jurisdiction), lengthy procedures, impunity for offenders, etc., cause justified citizen dissatisfaction.

6. State authorities rarely and insufficiently exploit the available potential of scientific and professional institutions in consultations when creating systemic changes. Numerous laws and by-laws do not produce positive or produce no effects, because they are not accompanied by appropriate risk assessments and management programs, for which institutions in the region are not educated and trained. At the same time, a number of regulations, that are, conceptually or substantially in conflict, are in operation.

7. A number of individual proposals for solving current problems were formulated at the conference, as follows:

- Promote zero tolerance in environmental protection in protected natural and cultural areas. Therefore, supremacy of laws on the protection of nature and laws on the protection of cultural property should be exercised over laws dealing with planning and construction;

- Given that most of the problems are of a technical nature, it is proposed to disseminate key engineering information and to strengthen the presence of engineers in local and state governments. Develop new engineering knowledge and skills, e.g. for the removal of objects, especially containing dangerous materials;

- The problems of illegal construction cannot be solved without the active and decisive action of the Chambers of Engineers, which should significantly tighten the rules on the professional responsibility of its members by imposing a suspension or revocation of licenses. Designers, auditors, technical controllers of projects, contractors, inspectors, opinion-makers and others who do not abide by laws and regulations should be promptly publicly convicted and punished, thereby creating appropriate social conditions for the preventive elimination of illegal construction and threats the environment;

- Eliminate the occurrence of conflicts in regulation when dealing with historic landfills, with the proper elaboration of appropriate by-laws and best available techniques. Incineration waste treatment projects, which are very sensitive, should be prepared with extreme care and with full public involvement;

- Significantly and substantially improve informing the public (citizens) about important planned changes that affect the environment in their environment. Provide the public with technical documentation and decisions of state bodies and commissions for projects of public importance (regardless of the status of the developer) at the time of their emergence. Ensure that the public actively participates in defining new uses of public spaces, with emphasis on greater and appropriate media engagement;

- Define mechanisms for the protection of green spaces in cities and settlements and, if possible, prevent their conversion into construction land and to that and create new related regulations;

- Consider banning the construction of small hydroelectric power plants (HPPs) in all mountainous areas of the region. This construction is at odds with the one in the region of ratified international conventions, especially significant NATURA 2000. Review whether the built SHPPs are safe. Consider abolishing incentive regulations for the production of renewable energy from small hydropower plants. Adopt regulations on the methodology for determining ecologically guaranteed flow downstream of water intake;

- To solve future environmental problems of industrial, mining and energy facilities at the design stage, the cleaner production method should be used, with valid, professional preparation of technical documentation. Ensure competent and impartial review of projects of national importance and full public insight in these reports;

- Simplify and expedite illegal construction inspection procedures. Toughen offenders' liability with greater penalties and binding criminal proceedings without pardon. Improve building regulations by eliminating collisions or failing to comply with provisions and solutions in other areas;
- Bearing in mind the lessons learned from the catastrophic floods that struck the region in May 2014 urgently eliminate all occurrences and problems caused by illegal construction and other forms of environmental and human health threats (e.g. threatening river embankments).

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## Conflict of Interest

No conflict of interest.

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