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➔ PREFACE

We welcome ICEUBI2019 - International Congress on Engineering - Engineering for Evolution, promoted by the Faculty of Engineering of the University of Beira Interior, in Covilhã, Portugal, with the sponsorship of the University Rectory and the institutional support of the City Council and the Portuguese Engineers Chamber. The event aims to promote the contribution and concern of Engineering for human society, makes a preview of the collective future - ensuring contact between researchers and practitioners from different fields of engineering, and allows the dissemination of its research, innovation, and development within several economic activity sectors. The ICEUBI2019 is in the sequence of successful previous editions (iceubi.ubi.pt) and includes in its program two invited lectures, three invited speakers, and 140 full papers presentations - of 23 different thematic and distributed by 30 parallel sessions.

The University of Beira Interior signed an agreement with KnE Publishing Services to include the ICEUBI2019 proceedings on the KnE Publishing Services website within the KnE Conference Proceedings Series, with the objective of providing a stable online version of the proceedings and raising its online visibility.

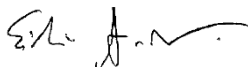
Thus, ICEUBI2019 proceedings will be submit to both Elsevier for indexing in Scopus and to Clarivate Analytics (formerly Thomson Reuters and ISI) for inclusion in the Web of Science (individual proceedings), mainly those papers that fulfil the highest publishing standards. After the Congress, a set of articles will have the possibility to be published in Special Issues of Open Engineering Journal, Materials Journal, Energies Journal, as in Millenium - Journal of Education, Technology, and Health, and Case Studies on Transport Problems Journal. Thus, the ICEUBI2019 Organizing Committee aims strongly to reinforce the internationalization of the event and raise its standard of quality.

Welcome to Portugal, to Covilhã, and the Faculty of Engineering of the University of Beira Interior, and... enjoy this experience!

Covilhã and UBI, November 27, 2019.

Silvio Mariano

Faculty of Engineering President



Jorge Silva

Organizing Committee Chairman



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Future land-use and land-cover scenarios for mapping flood-prone areas in Pato Branco city, Brazil

Isabel Dalanhol,¹ Ney Lyzandro Tabalipa,¹ Flora Cristina Meireles Silva²

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Abstract

Urban flooding is the most common type of disaster and the one that hit people most. Unplanned urbanization processes increase the recurrence of these events due to soil impermeabilization. Thus, land-use and land-cover is an important factor for urban flood research. Besides, mapping flood-prone areas has been an alternative for disaster prevention and urban planning. However, the use of future land-use and land-cover scenarios for flood mapping is a factor that still requires investigation. The study that is being developed by the authors of this paper aims to identify flood-prone areas in the upper third of the Ligeiro River basin in the city of Pato Branco, Parana, Brazil. For this purpose, this research makes use of the GIS-AHP integration, considering a current scenario and future land-use and land-cover scenarios. Therefore, the objective of the present study is to construct possible land-use and land-cover scenarios, according to municipal legislation, that could serve as a basis for mapping flood-prone areas. Two scenarios were built using Geographic Information Systems software. This tool proved to be efficient in the elaboration of maps and land representation. Pato Branco already has a history of flooding with the current scenario of land-use and land-cover. With future land-use and land-cover scenarios, it is possible to verify the influence of urban sprawl on urban flooding.

Keywords

Land-use and land-cover (LULC), Floods, Geographic Information Systems (GIS), Analytic Hierarchy Process (AHP)



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