Prospective Of Urban Growth Based on Cellular Automata in Land Use Management in The City of Huancayo.

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- **Abstract:** The research used the cellular automata method for the generation of prospective scenarios, where the influence of urban growth on the distribution of land use in the city of Huancayo is evident, from 2015 to 2035, noting the generation of intermediate areas, known as conourbans that are located around the city under study. The methodology of cellular automata (CA), Corine Land Cover in the classification of land use adopted by Peru in 2014 and Landsat 7 ETM+ satellite images were used. The cellular automata divide the geographic space of the city into finite areas of 60 square meters, which constitutes the cells or cells of the CAs, where in each of them are located the activities: economic, commercial, industrial among others. Moore's boundary or neighborhood conditions were applied with nine cells or cells, where the state of each of them is determined by a transition function, and this influences the next change of state. For the model, the analysis from 1995 to 2015 was used, time period in which the model is refined and validated when the land use change and, from there, the prospective scenario is generated until the year 2035. The research uses the positivist approach, through quantitative analysis on how urban growth in the city of Huancayo influences the distribution of land use. According to the CA model, by the year 2035, a considerable decrease in green areas is foreseen as a consequence of urban growth. The population will be located around the city in the intermediate zone, commercial growth increases at a rate of 2.23% and road growth by 2.37% annually. The prospective growth scenario is in the north-south axes, where urbanization increases towards the districts of San Agustín de Cajas, San Jerónimo, Hualhuas, joining Jauja and to the south towards the area of Huáncan and Viques; the other axis of development is from east to west, generating poles of tourist areas such as Pilcomayo and Huamancaca.

- **Keywords:** Cellular automata method, Commercial growth, Pilcomayo and Huamancaca