

Adaptive Approach Towards Comprehensive Urban Development Simulation in Coastal Regions: Case Study of New Alamein City, Egypt

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Abstract : Climate change in coastal areas is a global issue that can be felt on local scale and will be around for decades and centuries to come to an end; it also has critical risks on the city's economy, communities, and the natural environment. One of these changes that cause a huge risk on coastal cities is the sea level rise (SLR). SLR is a result of scarcity and reduction in global environmental system. The main cause of climate change and global warming is the countries with high development index (HDI) as Japan and Germany while the medium and low HDI countries as Egypt does not have enough awareness and advanced tactics to adapt with this changes that destroy urban areas and cause loss in land and economy. This is why Climate Resilience is one of the UN sustainable development goals 2030, which is calling for actions to strengthen climate change resilience through mitigation and adaptation. For many reasons, adaptation has received less attention than mitigation and it is only recently that adaptation has become a focal global point of attention. This adaptation can be achieved through some actions such as upgrading the use and the design of the land, adjusting business and activities of people, and increasing community understanding of climate risks. To reach the adaption goals, and we have to apply a strategic pathway to Climate Resilience, which is the Urban Bioregionalism Paradigm. Resiliency has been framed as persistence, adaptation, and transformation. Climate Resilience decision support system includes a visualization platform where ecological, social, and economic information can be viewed alongside with specific geographies that's why Urban Bioregionalism is a socio-ecological system which is defined as a paradigm that has potential to help move social attitudes toward environmental understanding and deepen human-environment connections within ecological development. The research aim is to achieve an adaptive integrated urban development model throughout the analyses of tactics and strategies that can be used to adapt urban areas and coastal communities to the challenges of climate changes especially SLR and also simulation model using advanced technological software for a coastal city corridor to elaborates the suitable strategy to apply.

Keywords : climate resilience, sea level rise, SLR, coastal resilience, adaptive development simulation

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