A Study on Collaborative Effort among the Neighboring Regions to Attain Flood Resilience

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Abstract

This paper describes a flood control system for urban area. Due to Climate change and urbanization, the floods caused serious damage throughout the urban area during every rainy season. Lift a few now, Seoul capital area includes three main administrative districts, Seoul, Incheon, and Gyeonggi-do. This capital area was a developed one, in 2000 the urbanized area was about 1,446km², almost covered 12.4% of the capital area. Till 2020, the capital urbanized area was predicted 2,653km² (Gang Cheolwon, Urbanization Process and Development Direction). Continued population increasing has also become a serious problem of urbanization because of the lack of land resources. Korea mainly adopted reclaimed land, but if building was constructed in this kind of flood plain, unquestionably, flood risk increased. And geographically, these regions were bound up with together. Therefore, solving flooding and reducing damage become more important to build a collaboration and unite by community of interests among the neighboring regions.

In this research, details on the structural and nonstructural flood measures were discussed, after statements of their basic problems, integrated flood control system were presented to apply the urban area. Meanwhile, updated Urban Flooding Paradigm was shown. so far, traditional structural measures such as drainage network has mainly been used. However, recent years, with the increase of rainfall intensity, flooding can't be solved. Therefore, more efficient measures with good effects for flood mitigation was indicated. And one updated future flooding paradigm - resilient and smart flood control system to tackle climate change and reduce damage. This paper described the “Smart” system was an organic circulation used to link land use, infrastructure, construction works, buildings, and citizens. Many useful data & information systems (WINS, WAMIS, RIMGIS, RAWRIS etc.) were sorted out, improvement direction was presented through borrowing foreign advanced ideas and real cases: LID (Low Impact Development) design and application.

For urban area, the final objective of building integrated flooding control system was fulfilled. Moreover, the policy proposal has also been presented how to decision-makers reach a decision on establishment of resilient and smart control system for urban flood.

Keywords: Resilient flood system, urban flood, structural measure, nonstructural measure, Collaborative Effort

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