

**Model Konseptual *Smart Disaster Management* Dalam Mewadahi Informasi
Peta Kerawanan, Sistem Peringatan Dini, Dan Mitigasi Banjir
Di Kota Semarang**

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INTISARI

Kota Semarang merupakan kota besar yang mengalami banjir pada setiap tahun. Banjir yang terjadi, yaitu banjir rob dan banjir perkotaan. Smart city yang dimiliki diharapkan dapat dikembangkan menjadi smart disaster management untuk menanggulangi banjir. Sebelum pengembangan dilakukan, perlu diperhatikan bahwa masih terdapat kendala pada akurasi peta kerawanan banjir di daerah dinamis seperti perkotaan dan model konseptual sebagai penuntun smart disaster management. Tahapan penelitian meliputi persiapan, survai lapangan, analisis dan penyusunan model, dan pengujian. Studi best practices dan Focus Group Discussion (FGD) juga dilakukan agar model lebih sesuai dengan kondisi di lapangan. Studi best practices membantu dalam menemukan metode terkini yang sesuai, sedangkan FGD membantu dalam mengetahui kesiapan penyelenggara. Hasil penelitian peta kerawanan banjir mengambil daerah sampel Kecamatan Genuk. Peta kerawanan banjir rob bersumber pada BPBD Kota Semarang (2016), sedangkan untuk banjir perkotaan dianalisis dengan parameter curah hujan, penggunaan lahan, bentuk lahan, elevasi, dan jenis tanah. Hasil tingkat kerawanan banjir rob untuk kriteria tinggi, sedang, dan rendah adalah 40,36%, 8,04%, dan 51,87%, sedangkan untuk banjir perkotaan yaitu sangat tinggi, tinggi, sedang, rendah, dan sangat rendah adalah 1,99%, 44,53%, 46,12%, 7,20%, dan 0,16%. Selanjutnya, sistem peringatan dini banjir masih dalam pengembangan dengan radar level sensors dan visual sensing. Mitigasi banjir secara struktural dan non struktural telah dilakukan pemerintah dan masyarakat, namun keduanya masih perlu ditingkatkan. Akhirnya, model konseptual dibangun berdasarkan share data antar instansi dalam suatu big data yang dapat diakses bersama menggunakan aplikasi smartphone. Kendala yang mungkin dihadapi yaitu keterbatasan sumber daya, pelaksanaan, respon masyarakat, dan updating model.

Kata kunci: *smart disaster management*, kerawanan banjir, sistem peringatan dini banjir, mitigasi banjir, model konseptual, Kota Semarang

***Conceptual Model of Flood Smart Disaster Management In Accommodating
Information of Suceptibility Maps, Early Warning System, And Mitigation
In Semarang City***

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ABSTRACT

Semarang city is a big city that experienced flood every year. Floods that occur, namely tidal floods and urban floods. Smart city that owned is expected to be developed into a smart disaster management to cope with flooding. Prior to development, it is important to note that there are still constraints on the accuracy of flood suceptibility maps in dynamic areas such as urban and conceptual models as guides for smart disaster management. Research stages include preparation, field survey, analysis and modeling, and testing. The best practices study and Focus Group Discussion (FGD) were also conducted to make the model more suitable to the conditions in the field. The best practices study helps in finding the most current suitable methods, while the FGD helps in knowing the organizers readiness. The results of the flood suceptibility took the sample area of Genuk District. The tidal flood suceptibility maps are sourced from BPBD Kota Semarang (2016), while urban floods are analyzed with rainfall parameter, land use, landform, elevation, and soil type. The results of tidal flood suceptibility for high, medium, and low criteria are 40.36%, 8.04%, and 51.87%, while urban floods are very high, high, medium, low and very low are 1, 99%, 44.53%, 46.12%, 7.20%, and 0.16%. Furthermore, flood early warning systems are still under development with radar level sensors and visual sensing. Structural and non-structural of flood mitigation has been done by the government and the community, but both still need to be improved. Finally, the conceptual model is built on data sharing among agencies in a big data that can be accessed together using smartphone applications. Constraints that may be faced are resource constraints, implementation, community response, and updating models.

Keywords: *smart disaster management, flood suceptibility, flood early warning system, flood mitigation, conceptual model, Semarang City*