FLOOD DAMAGE PREDICTION SYSTEM FOR DISASTER RISK REDUCTION

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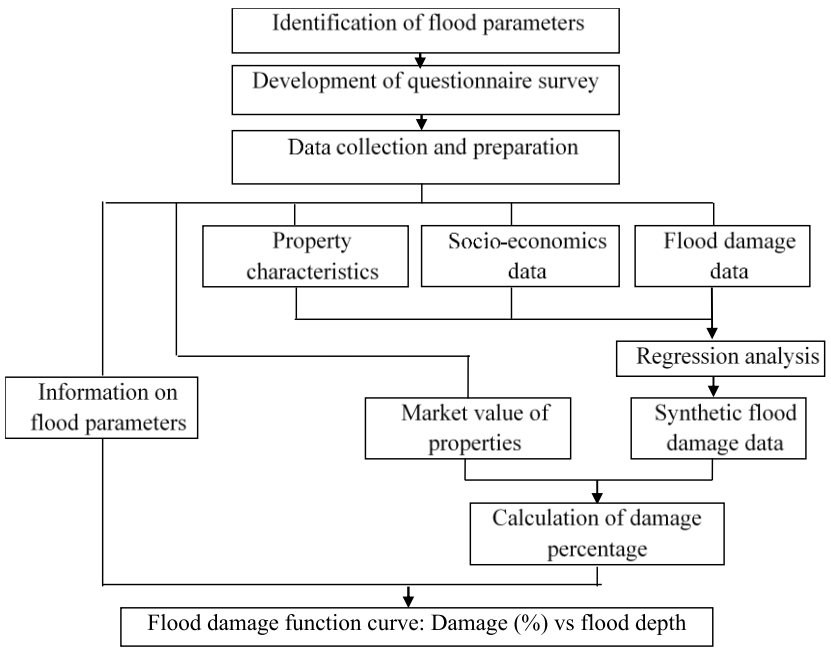
Product Background

- **FDAPS is a flood damage prediction system capable to forecast the expected value of flood damage corresponding to the flood depth for a flood event.**
- **It is solely based on the damage data collected from major flood event for the respective location. The flood damage is described as a percentage of the total value of the damaged property, hence it can be used for any flood event.**
- **FDAPS give the prediction of damage based on the selection of area, category, and flood depth.**

State of the art: The concept of FDAPS



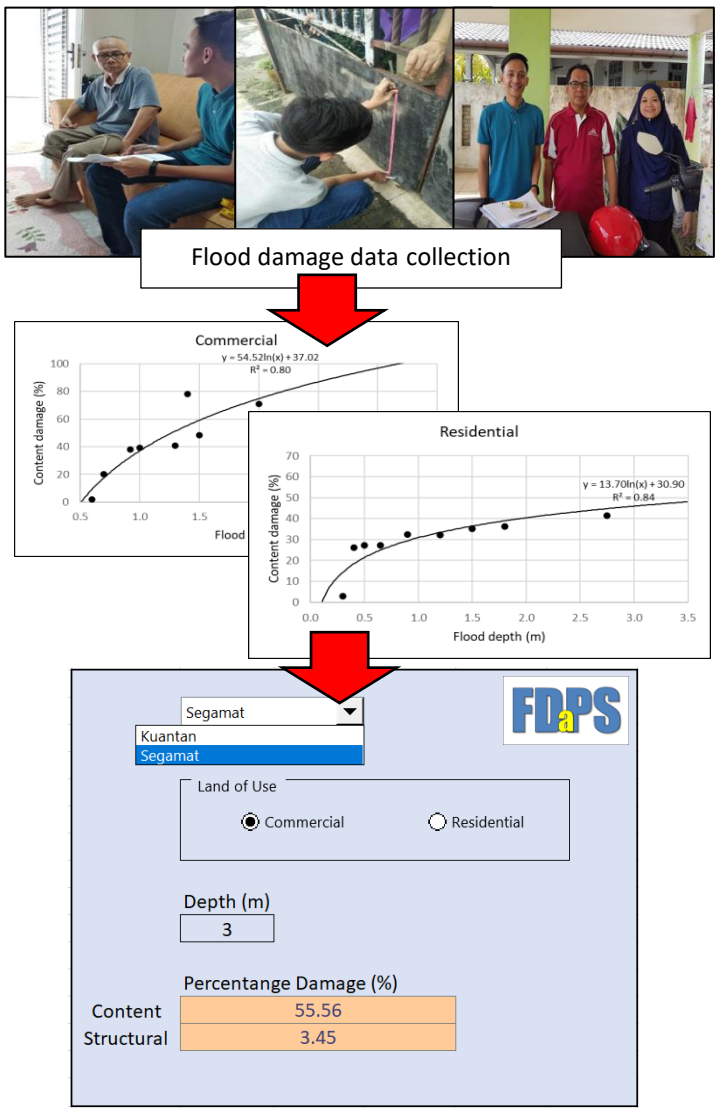
Novelty

- **FDAPS is a tool that capable to assist in the disaster risk reduction (DRR) by providing the information on the possible impacts of flood.**
- **Normally, the risk of flooding is illustrated in terms of flood hazard. FDAPS is a first system having an ability to evaluate the susceptibility of an area to flood in terms of the flood vulnerability i.e. flood damage.**

Benefits & Applicability

- **A time and cost-saving tool.**
- **FDAPS provide essential element needed in the flood damage modeling.**
- **Beneficial to insurance company to identify the risk of an area to flooding for flood insurance purpose.**
- **Using FDAPS, the prone flood area can be easily identified for further flood mitigation action.**

Product Characteristics



Marketability & Commercialisation

- **A system that can be utilized by government as well as private agencies for the management of flood risk.**
- **A system that may assist flood insurance company in cost-benefit analysis for flood zoning.**

Environmental Impact

- **Capable to reduce the risk of flooding thus help in flood mitigation.**

Cost Analysis

- **Cost efficient tool as it use a simple system using excel application.**

Status of Innovation

- **Prototype**

Publication

- **Romali, N. S., Romali N. S. and Yusop Z. (2021). Flood Risk and Damage Assessment for Urban Area in Malaysia. *Hydrology Research*, Vol 52, Issue 1, (2021), pp. 142 – 159. (WoS Indexed Journal)**
- **Romali N. S. and Yusop Z., Establishment of Residential Flood Damage Function Model for Kuantan, Malaysia, *International Journal of GEOMATE*, Vol 19, Issue 71, (2020), pp. 21-27. (Scopus Indexed Journal)**
- **Romali, N. S., Yusop, Z., Mohd Zaki, N. I. H., Sulaiman, M., Ahmad Abdul Ghani, N. A. and Sulaiman, S. (2019). Flood Damage Function Model for Residential area in Kuantan: A Preliminary Study. *The International Journal of Integrated Engineering*, 11:1 (2019), pp. 203-213. (Scopus Indexed Journal)**
- **Romali, N. S., Yusop, Z., Sulaiman, M. and Ismail, Z. (2018). Flood Risk Assessment: A Review of Flood Damage Estimation Model for Malaysia. *Jurnal Teknologi*, 80:3 (2018), pp. 145-153. (Scopus Indexed Journal)**

Potential Industrial Collaborator:

Drainage and Irrigation Department (DID) Malaysia

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