

Integration of local and scientific knowledge to enhance community resilience against flood disaster: a case study of kemaman, Malaysia

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The unprecedented two weeks devastating flood that plunged the east coast of Malaysia Peninsular in late December 2014 had cost an initial economic loss estimated by least at USD300 millions, and severely affected approximately 300,000 victims. The top down disaster relief efforts which led by the National Security Council (NSC) had been under severe criticism then, for their incapability to respond affectively, and coordinating disaster relief by various government agencies and non-governmental organisations. The council has been accused of being inefficient, in term of inaccurate forecasting, issuing an early warning to communities living in flood prone areas, uncoordinated evacuation processes, inappropriate relief centre management, sluggish logistic, and inadequate amount food and medical supply during the chaotic period, which predominantly affected the large number of victims, scattered across a vast region. Nevertheless, a community in Kemaman, Terengganu, was an exception. Through in depth group interview, it is learnt that this community, led by their state assemblyman, has developed a decent self-initiate plan that enhanced their resiliency towards flood. Basic scientific flood related data such as rainfall intensity graph, frequent flooded area map, real-time rivers' water level, and ocean tidal data of previous floods, and supported by local knowledge information like the local topography, rivers morphology, existing housing area, road network, and location of

possible evacuation centres of their constituency has been scrutinised, comprehend and utilised collectively to develop an early warning indicator. Then, a coordinated plan for flood evacuation procedure, and systematic logistic activities for self-relief purposes was established prior to the flood. These information and plan were disseminated throughout the community through their respective community leaders, months before the disaster struck. As a result, damages caused by the flood on the community in the 2014 flood were significantly minimised compared to the previous years and other communities in the East Coast of Malaysia Peninsular. Ever since then, the community disaster preparedness model has been recognised as a prominent benchmark, and further suggested by many to be an example of a bottom up approach in community based knowledge flood management model, to compliment measures used by the government in dealing with future flood incidence in Malaysia.