
A tool to locate potential death areas due to coastal flood: the V.I.E. Index

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Résumé

Storm Xynthia is the deadliest coastal flood event known in France since 1950's. In February 2010, Xynthia was responsible for an important coastal flood which led to the death by drowning of 41 people. The most specific characteristic of this event is that 93% of the deaths were located inside houses, which contribute to trap inhabitants. Though Storm Xynthia occurred during the night, surprising people's during their sleep, it suggests that houses could present some characteristics which can increase vulnerability of people in case of flooding: location in low-lying flooding areas, closeness to dikes which can break, predominance of single-storey constructions which do not provide the possibility to escape through the roof.

In consequence, French State implemented a resettlement scheme, mapping constructions which were considered too dangerous for people. However, this scheme was realized only on Storm Xynthia's impacted areas.

Nonetheless, it subsist other areas with similar characteristics on French Atlantic coast: low-lying urbanized areas, protected by dikes, with predominantly single-storey.

This poster proposes a simple prospective's tool to identify danger areas for the population through characteristics of houses. The Vulnérabilité Intrinsèque Extrême index (VIE – LIFE index in english) is based on four criteria: (i) potential water depth per house, (ii) distance between dikes and houses, (ii) architectural typology and (iv) closeness to rescue point.

The index is useful to realise an initial assessment of vulnerability of seven cities on French Atlantic coast. It allows confirming the high exposure of Xynthia's affected territories and to identify other vulnerable areas.

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Mots-Clés: coastal risk, coastal flood, vulnerability, mortality, climate change, economic appraisal, single, storey houses.