

FACULTÉ DES SCIENCES Section des sciences de la Terre et de l'environnement







# Contribution of citizen science in flood hazard assessment

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### Where: Yeumbeul Nord, Dakar, Senegal

#### Yeumbeul Nord:

- *Area:* 9km<sup>2</sup>
- Total population: 168'379
  Altitude: 0-20m
- Several floods: 2005, 2009
- Flooding causes: Natural and anthropogenic

#### This area is characterized:

- Lack of catalogue of past events
- Poor coverage of hydrometeorological data
- No regular update of basic data
- Some issues with satellite images (e.g frequency)





#### How: Involvment of citizens

# Rainfall data acquisition, land-use mapping and investigation on past flood events



Training, different target groups, local language

Higher quality data

#### Results

#### Daily average rainfall



Official station

→Values are in the same range with a variability less than 10 mm (exception of 17Sept.)

#### Results

#### Extent



Neighbourhood chiefs vs remote sensing  $\implies$ Some differences in spatial distribution Remote sensing 0.72 km<sup>2</sup> and neighbourhood chiefs 0.90 km<sup>2</sup> an increase of 25%



Neighbourhood chiefs  $\implies$ 2009 event: depth varies from 0.2 m to 1m

#### New insights on

- Past flood events having affected the area
- Rainfall intensity
- Land-use elements potentially influencing flood magnitude
- An alternative approach for areas with scarce data and insufficient financial resources



## Thanks

