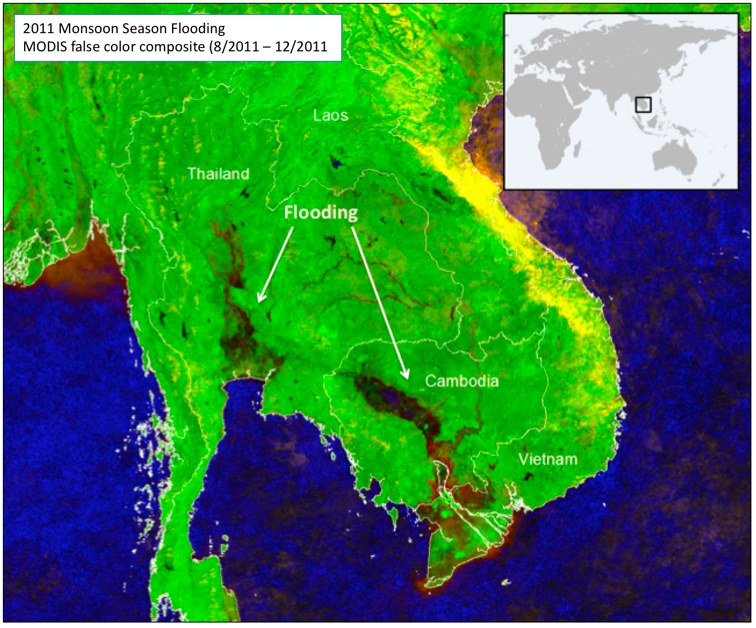
**Imaging Surface Water in the Mekong River Basin with Multi Scale Remote Sensing**

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**Funding Agency**: National Geographic

**Grant Amount**: USD $10,000

**Team**

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+ Thanapon Piman, PhD SEI

+ Thanapon’s student?

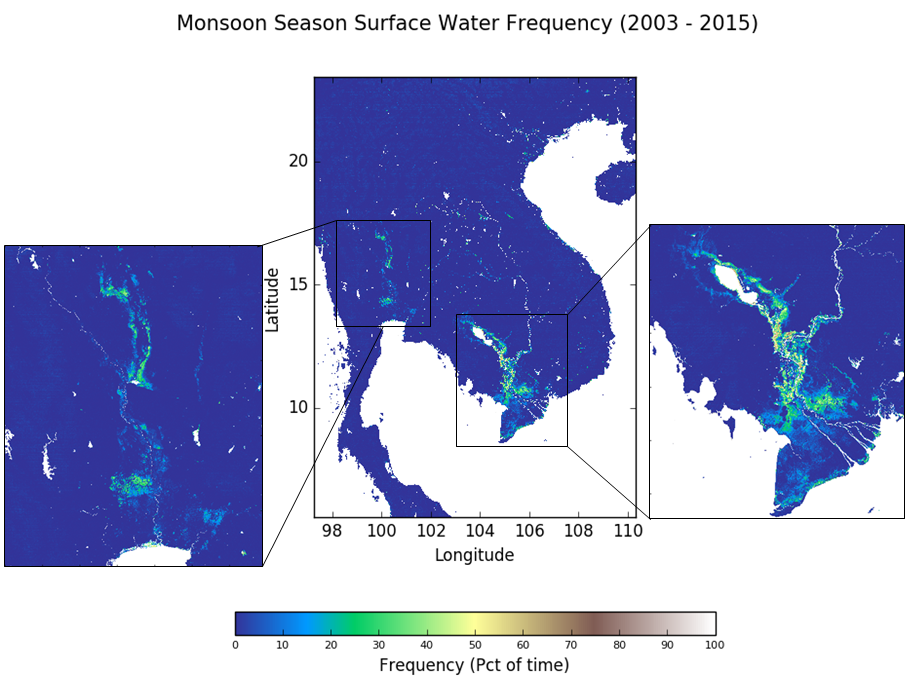
**Study Objectives**

1. Compare surface water extent derived from multiple sensors: (1) drones (cm – m), (2) Landsat / Sentinel (10-30m), (3) MODIS (250m).
2. Image suspended sediment and bank erosion in the Tonle Sap Region.
3. Capture the seasonal cycle, acquiring imagery in monsoon and non-monsoon seasons.
4. Create local Digital Elevation Models using Structure from Motion photogrammetry applied to drone imagery.
5. Others?

**Deliverables**

1. A novel dataset of surface water extent derived from imagery acquired at three spatial scales.
2. Web portal of all data, analysis code and software, and documentation/materials to replicate the study.
3. (2021 – 2022) A white paper or peer reviewed publication describing the acquisition, processing, and classification of surface water extent across three spatial scales.

**Field Sites and Study Dates**

1. Myanmar, TBD
2. Tonle Sap, TBD
3. …

**Supporting Publications:**

Oddo, P. C., Ahamed, A., & Bolten, J. D. (2018). Socioeconomic Impact Evaluation for Near Real-Time Flood Detection in the Lower Mekong River Basin. *Hydrology*, *5*(2), 23.

Ahamed, A., & Bolten, J. D. (2017). A MODIS-based automated flood monitoring system for southeast asia. *International journal of applied earth observation and geoinformation*, *61*, 104-117.

Fayne, J., Bolten, J., Lakshmi, V., & Ahamed, A. (2017). Optical and Physical Methods for Mapping Flooding with Satellite Imagery. In *Remote Sensing of Hydrological Extremes* (pp. 83-103). Springer, Cham.