Expert Consultation 'Identifying Problems, Finding Solutions Nov. 2024

November 12, 2024'

USP GEOSPATIAL SCIENCE

Eberhard Weber

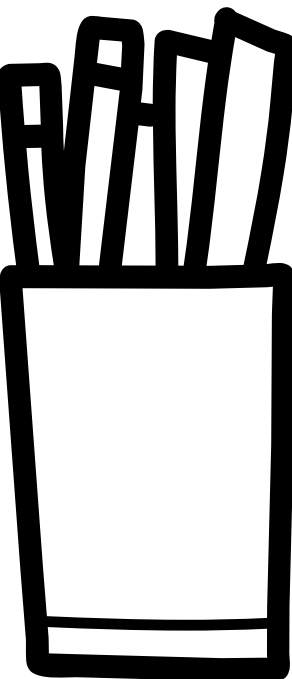**Discipline of Geography, Earth Science and Environment (SAGEONS)**

The University of the South Pacific

CONTENTS

BACKGROUND

Fiji: Introduction of GIS and Remote Sensing (1990s)

1990s: Fiji began using **GIS** and **remote sensing** technologies primarily in government departments, universities, and environmental agencies. Applications focused on environmental monitoring, natural resource management.

In **1990** the **Ministry of Lands** with the assistance of the New Zealand government (NZAID) established a Land Information System (GIS) strategy in Fiji.

Fiji Lands and Survey Department and the **Ministry of Forestry** were among the first to use geospatial data for land management and forest conservation.

Pacific Islands Applied Geoscience Commission (SOPAC): SOPAC played a critical role in promoting geospatial science across the region, including Fiji. They provided training, data, and technology to build capacity for geospatial applications in disaster management, land use, and resource planning.
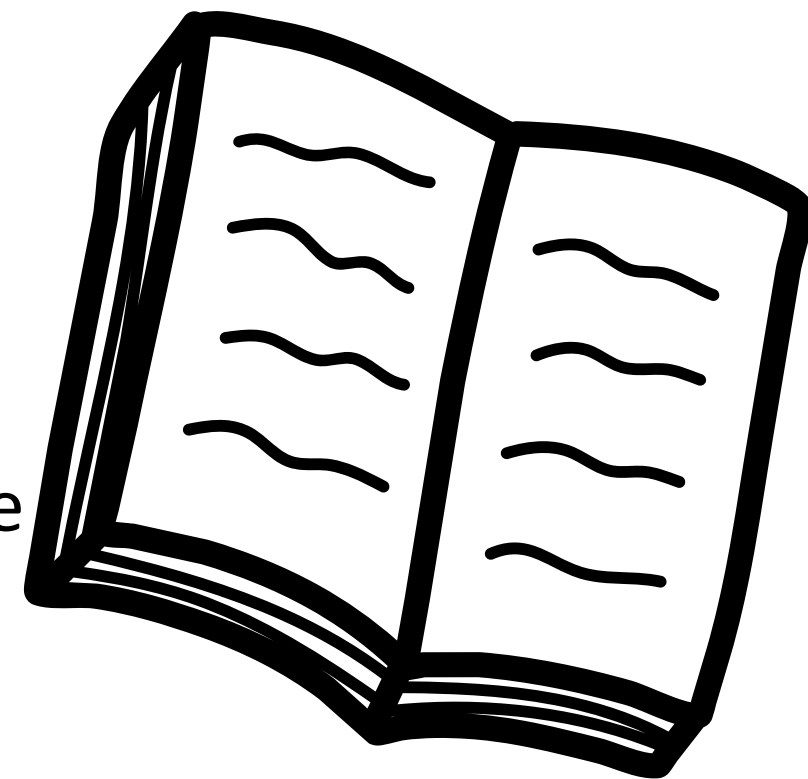
BACKGROUND

GS at USP

1994, the need to introduce courses in LIS/GIS at USP in Fiji expressed.

Centre for GIS in USP's Suva Campus created under the portfolio of the then Geography Department offering a second year (200-Level) paper in GIS that was very practically oriented.

A Diploma program in GIS commenced in 1996.

Since 2015 we offer a Bachelor in Geospatial Science in two steams, Developer and Analyst.
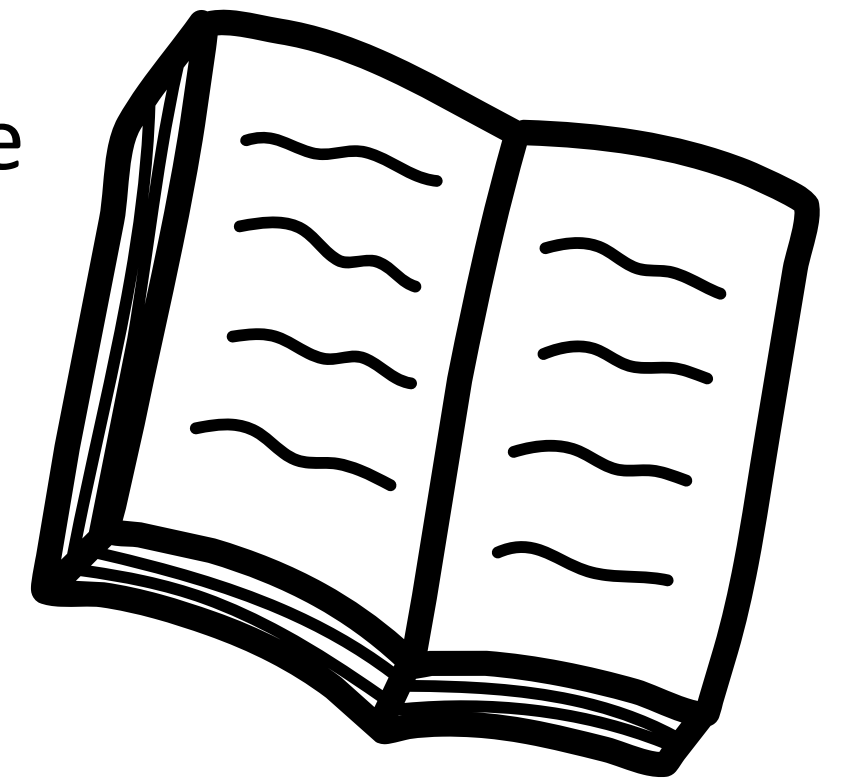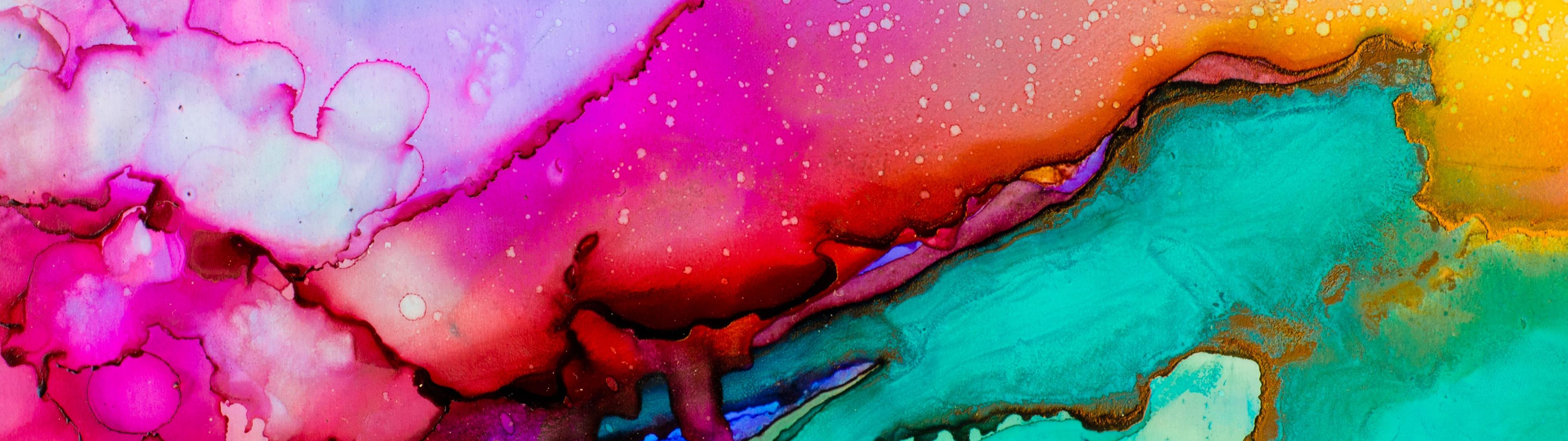
Today The University of the South Pacific operates 4 geospatial labs within the Discipline of Geography, Earth Science and Environment.

2 teaching labs with 24 seats with projector and instructor computer.

1 geospatial research lab – focal point for conducting research using geospatial technologies and methods

1 geospatial operations lab – equipment store for survey gear, drones fleet
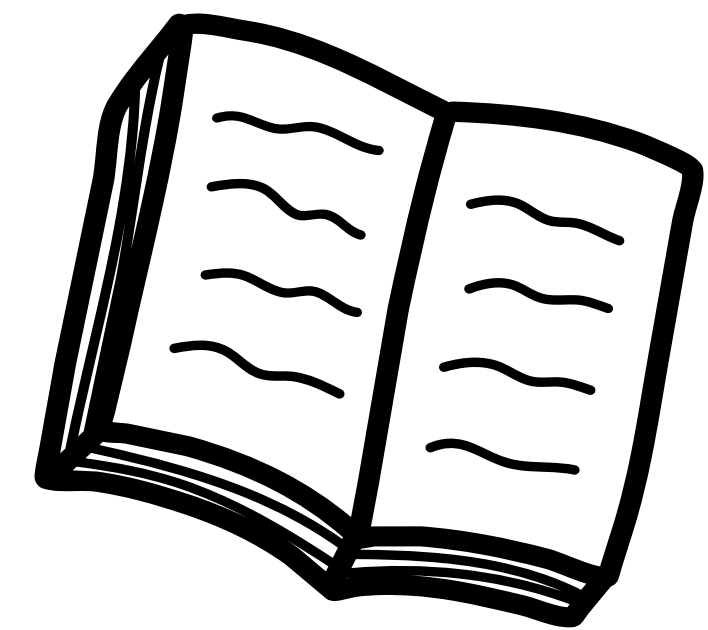
GS AT USP

The Bachelor of Geospatial Science is a three-year programme comprising of twenty four courses, eight at 100 level, eight at 200 level and eight at 300 level.

Geospatial Analyst pathway:
Year I: UU100A*, UU114, GS100, GS101, IS104, ST130, LM113; plus two 100-level courses from GE, ES, MS
Year II: UU200, UU204, GS200, GS201, GS211, GS231, plus two 200 level courses from GE, ES, EV, MS
Year III: SC356, GS301, GS302, GS311, GS350; plus three 300 level courses from GE, ES, EV, MS

Geospatial Developer pathway:
Year I: UU100A*, UU114, GS100, GS101, IS104, ST130, LM113; plus two 100 level courses from GE, ES, MS
Year II: UU200, UU204, GS200, GS201, GS211, GS231, IS222, IS202.
Year III: SC356, GS301, GS302, GS311, GS350, IS302 or IS322, IS328, IS333.

GIS / RS
USP
Content

Geospatial Science Courses for a Double Major:
Year I UU100A, UU114, IS104, GS100, GS101; plus four courses from 2nd major
Year II UU200, UU204, GS201, GS211, GS231; plus three courses from 2nd major
Year III SC356, GS301, GS302, GS311; plus four courses from 2nd major

STUDENT PROJECTS

Landfill Site Suitability Analysis
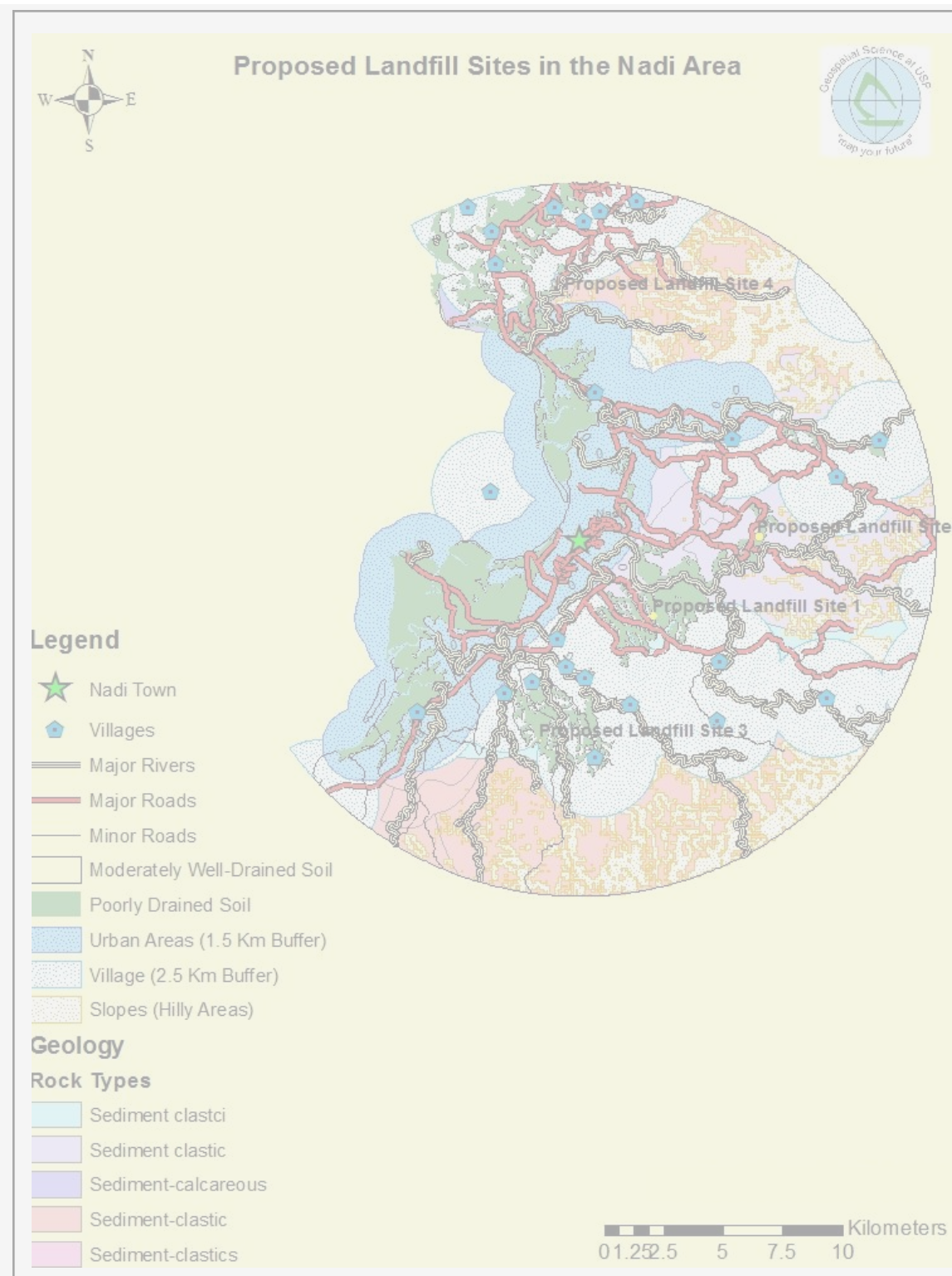**(s11061979, 2014)**

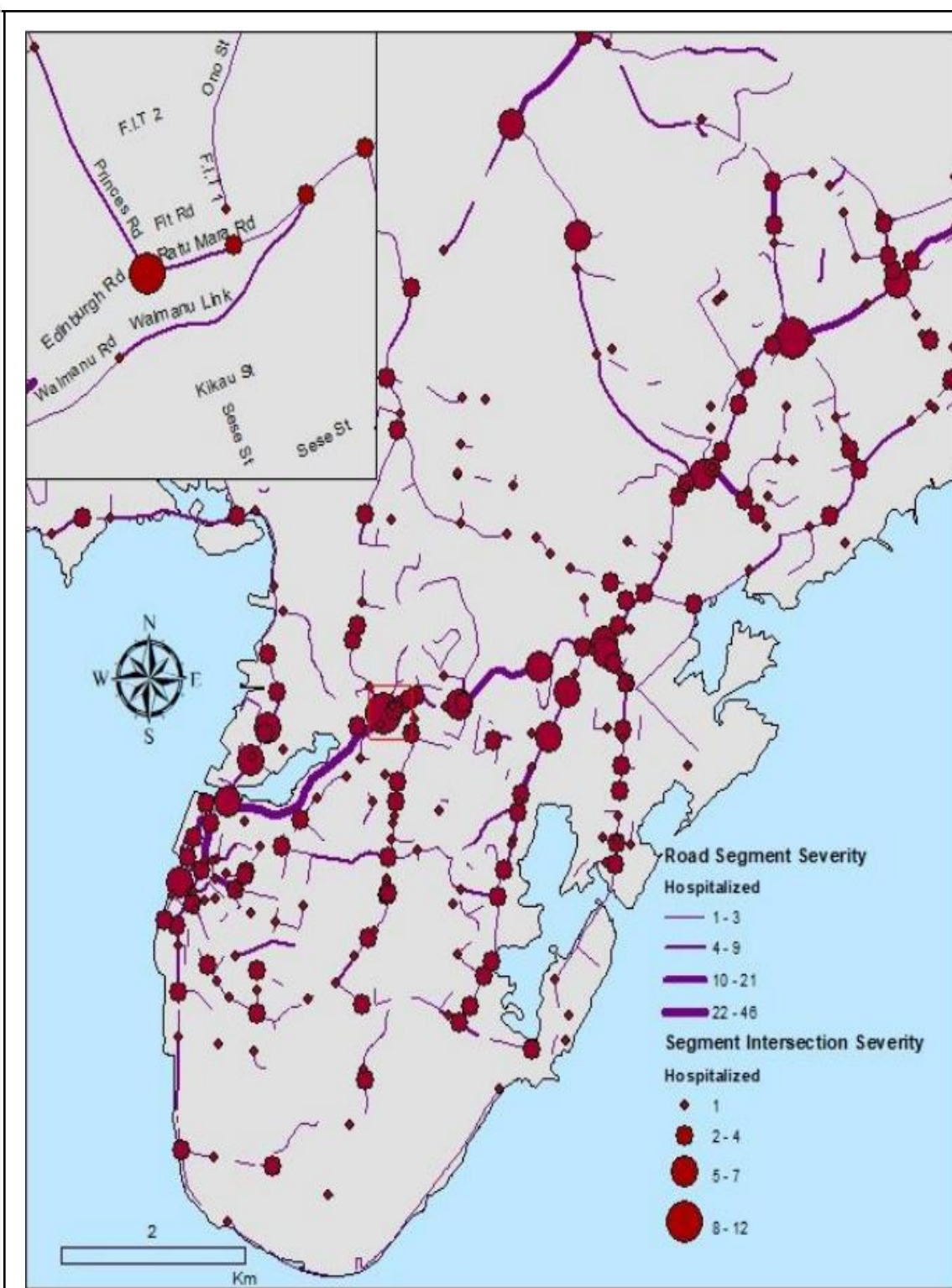Traffic collision mapping
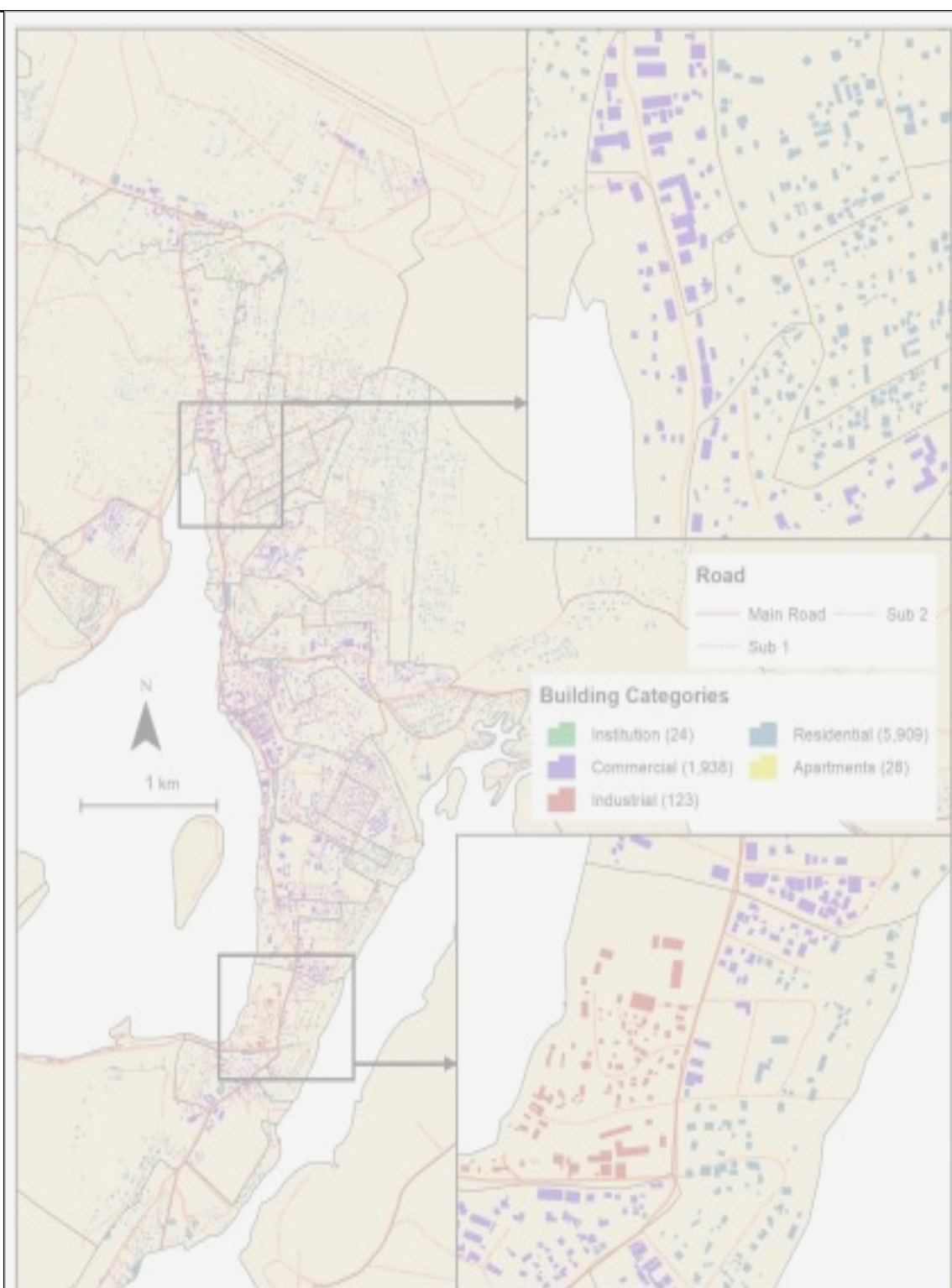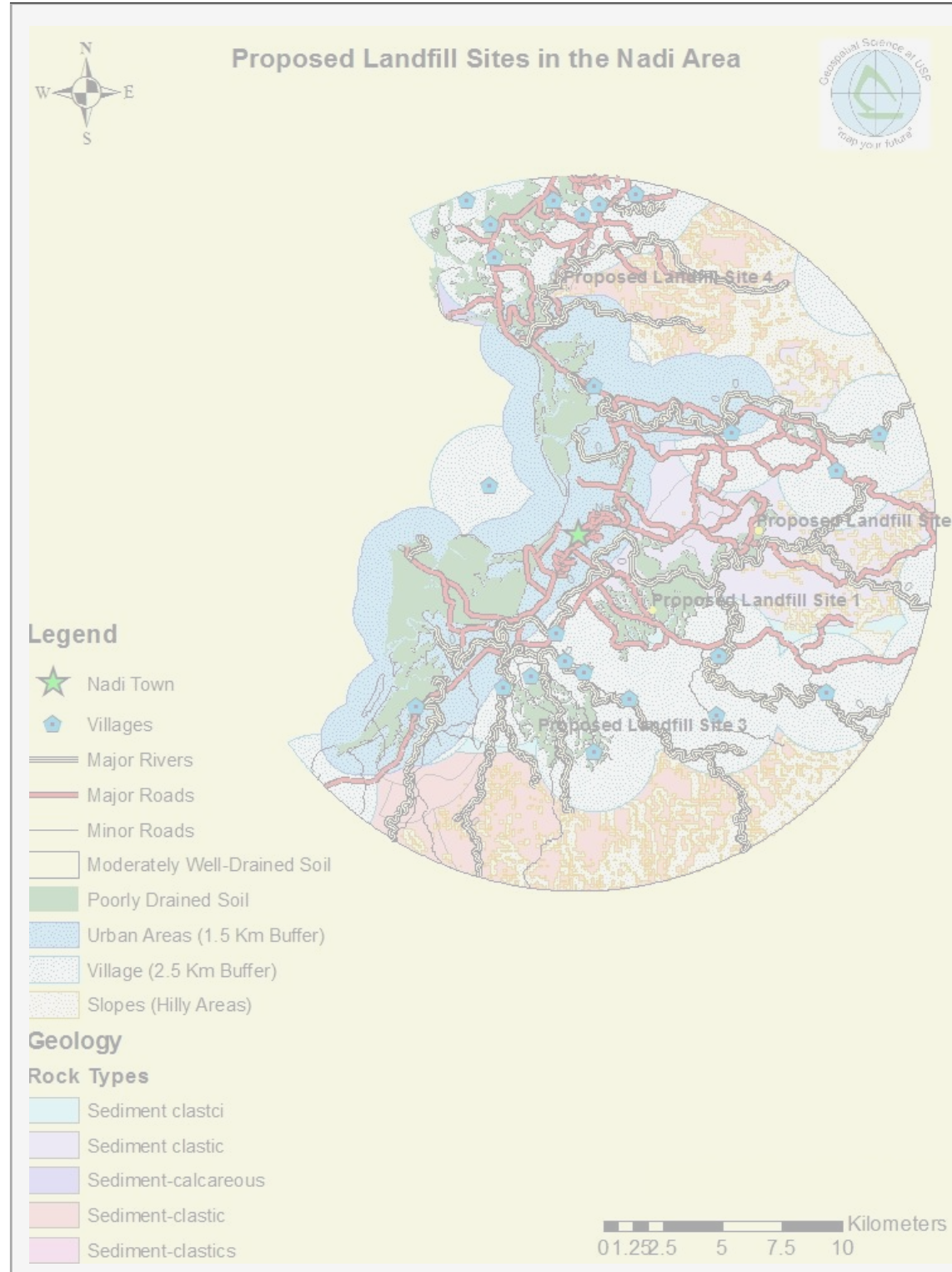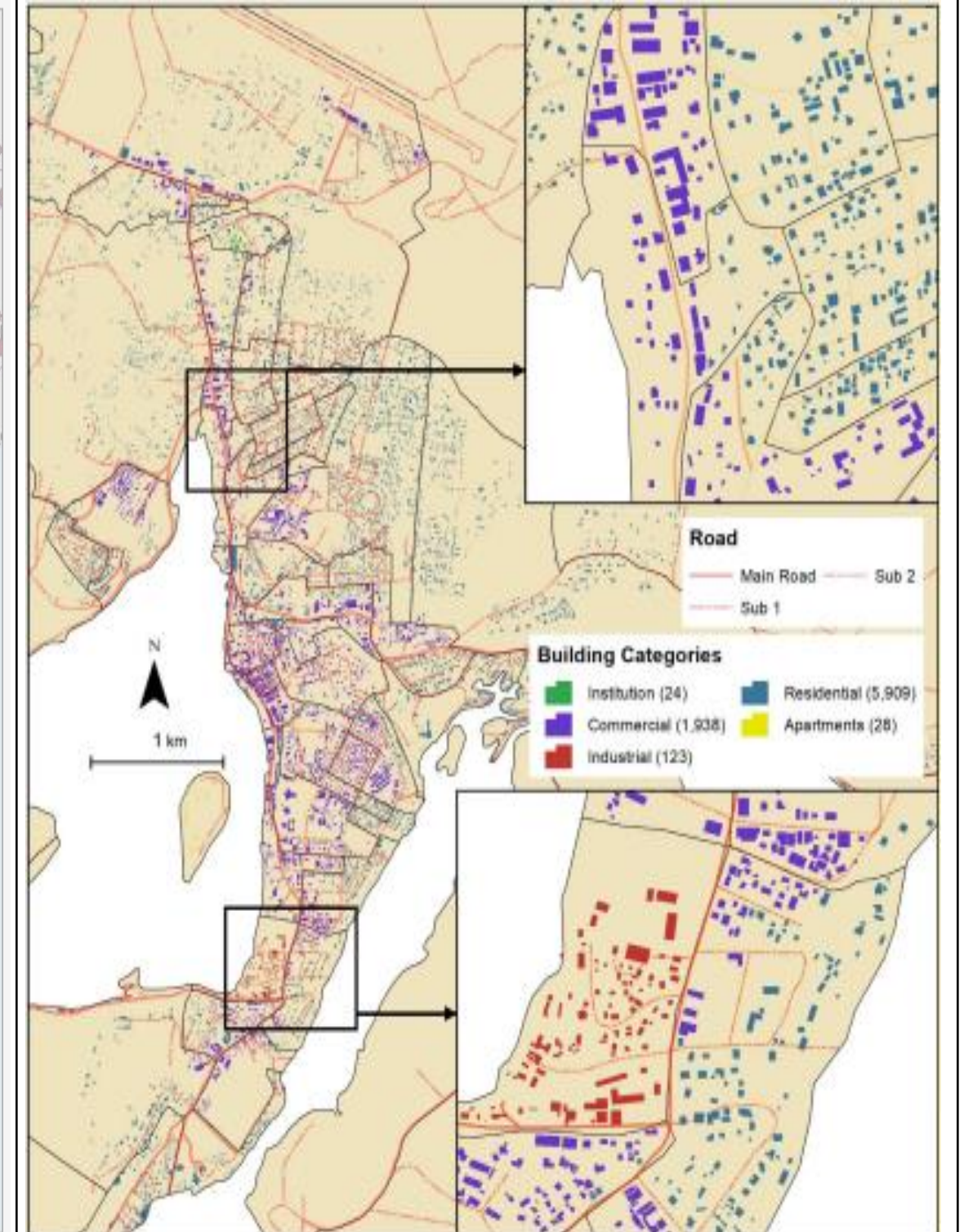(S11148473, 2019)

Categorising of building footprints
(S11131768, 2019)

STUDENT PROJECTS – GIS Analysis [1]

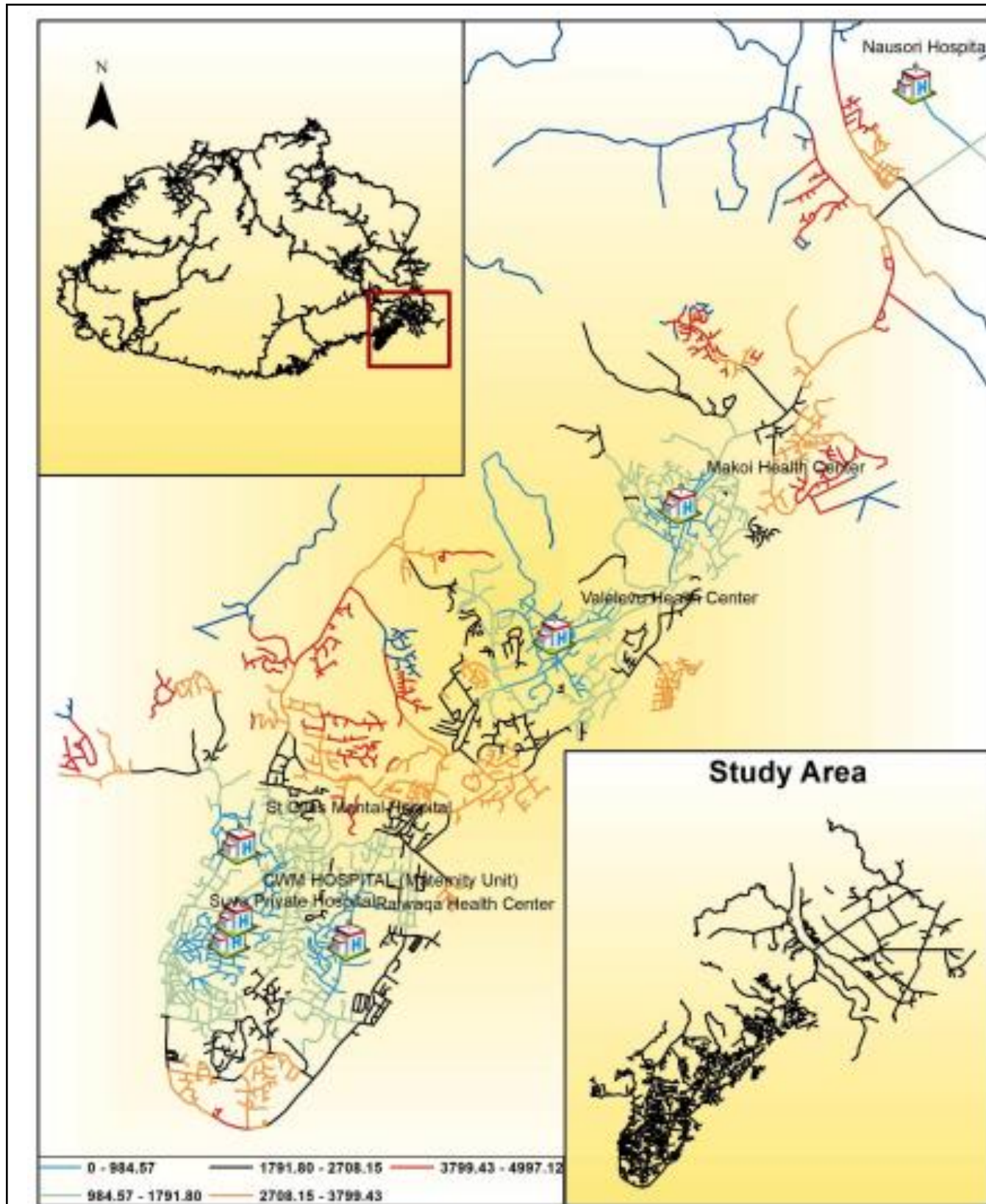**Landfill Site Suitability Analysis**
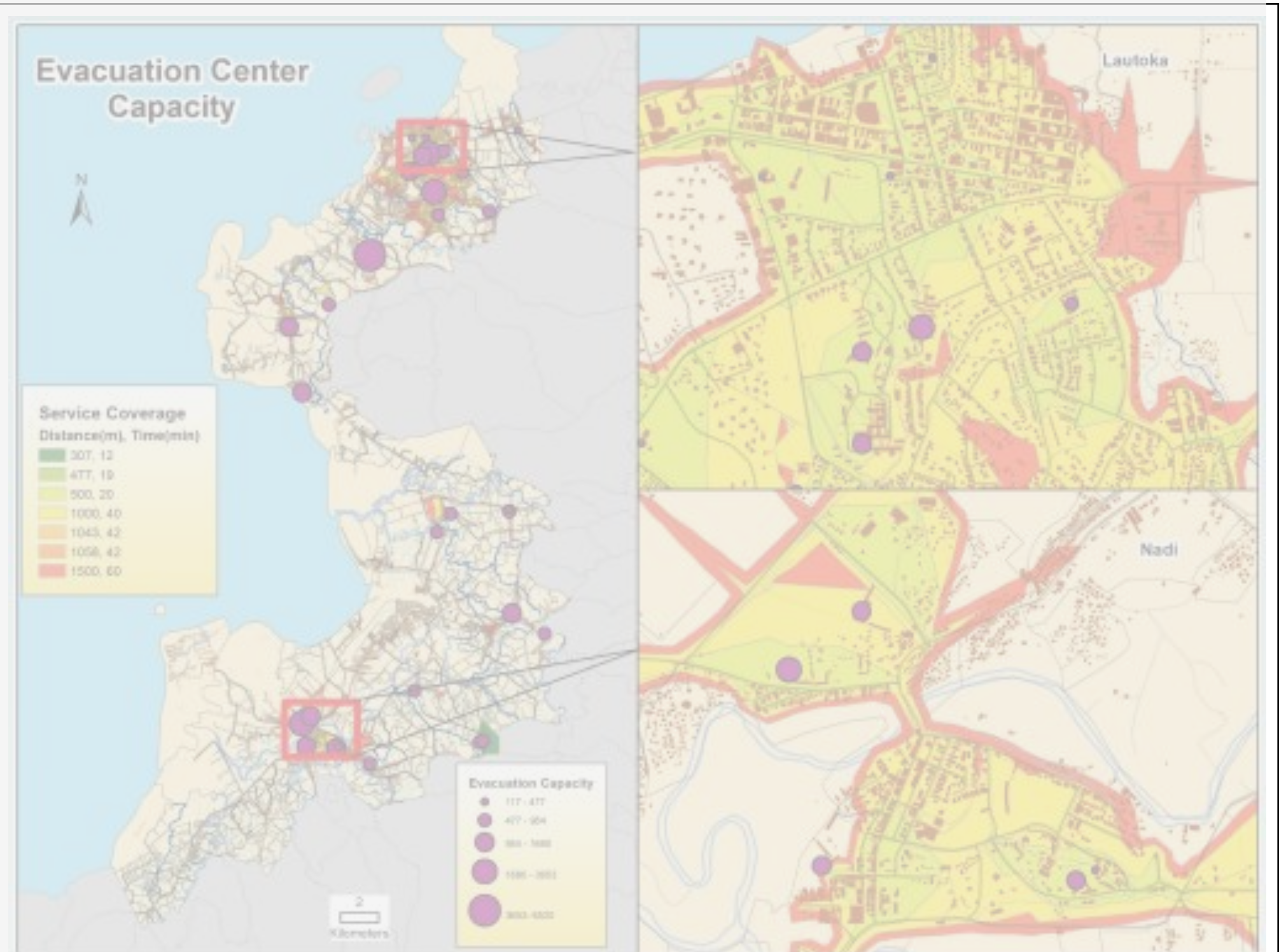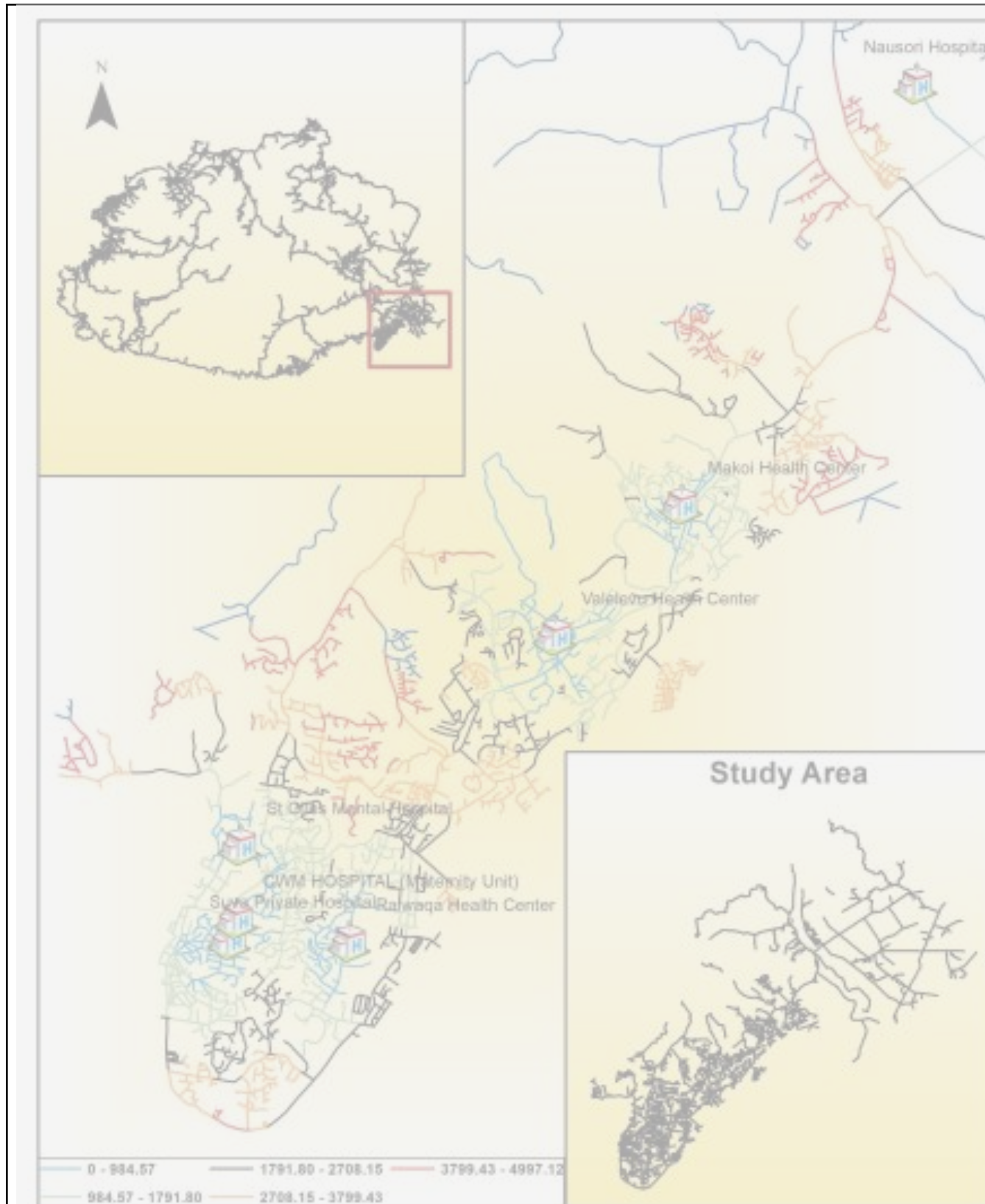(s11061979, 2014)

Traffic collision mapping
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Landfill Site Suitability Analysis
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Road Network Analysis for medical emergencies
(S11144385, 2019)

Surface coverage and Evacuation Center Capacity Analysis
(S11109542, 2019)

Road Network Analysis for medical emergencies
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Surface coverage and Evacuation Center Capacity Analysis
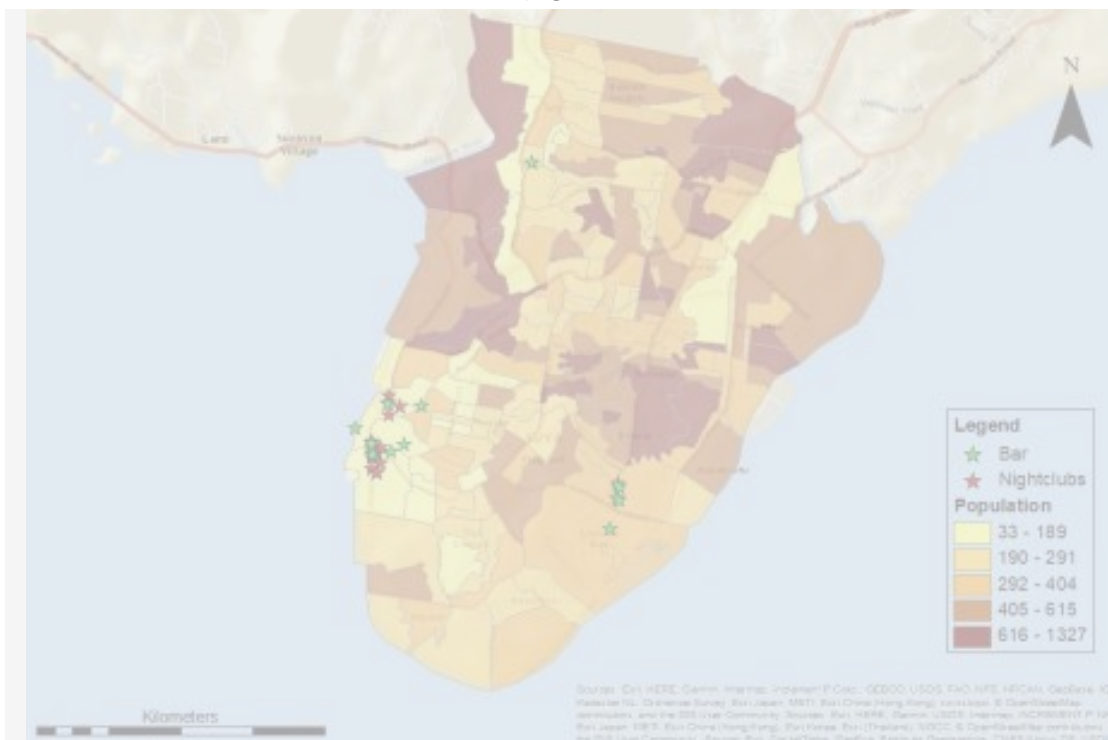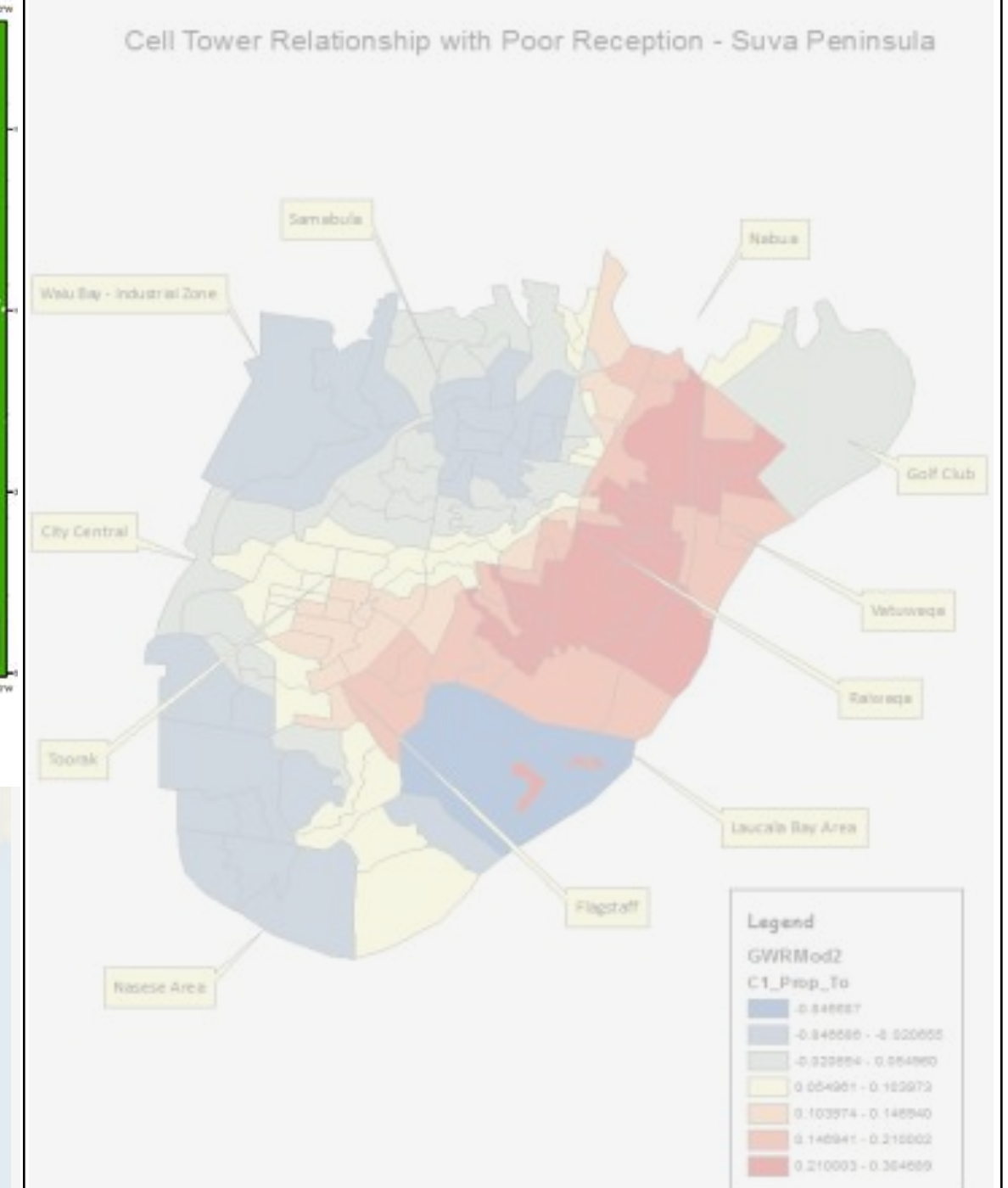(S11109542, 2019)

STUDENT PROJECTS – Spatial Analysis

Crime hotspot analysis
(S11007227, 2006)

Tropical cyclones sinuosity spatial patterns
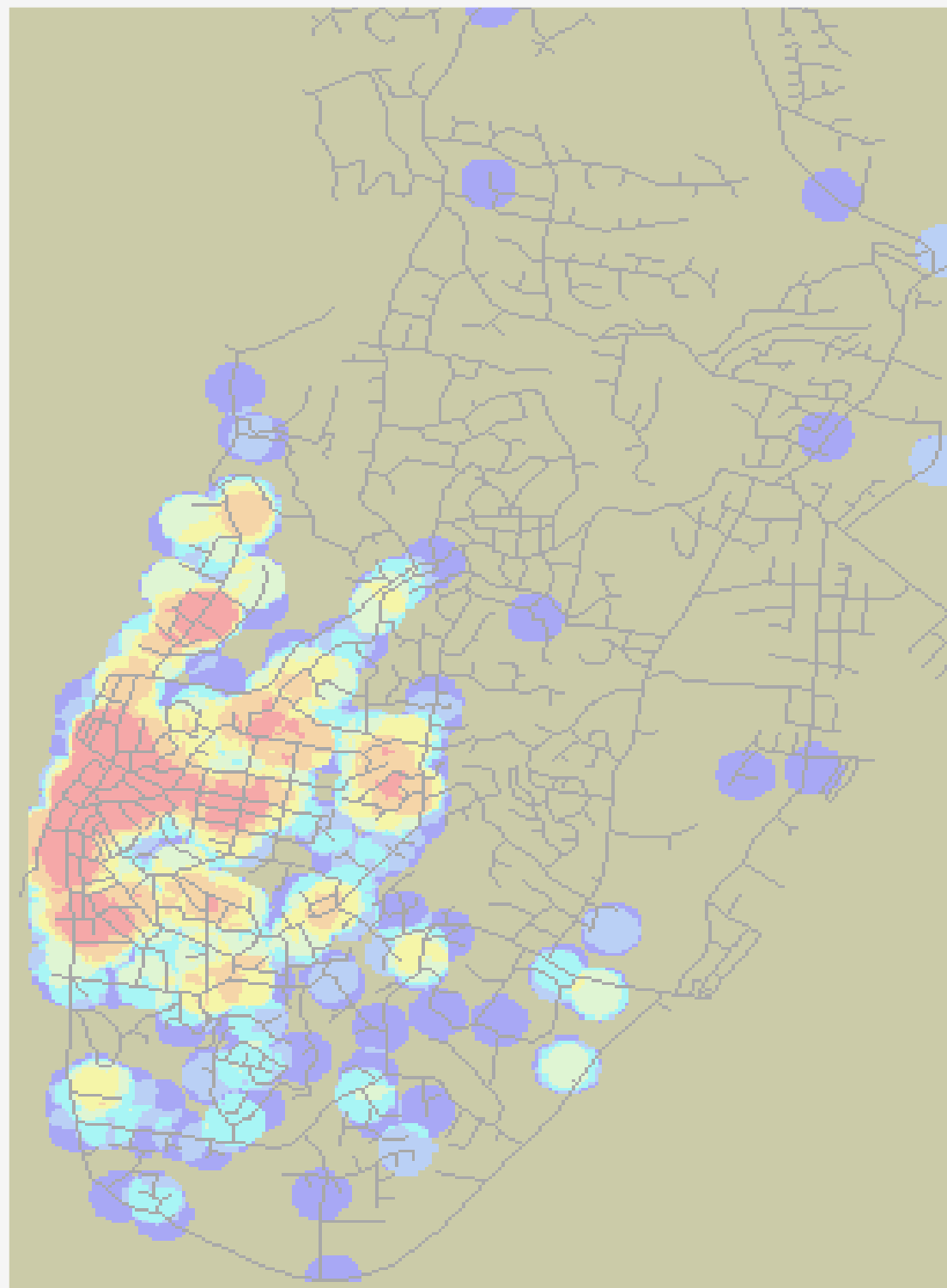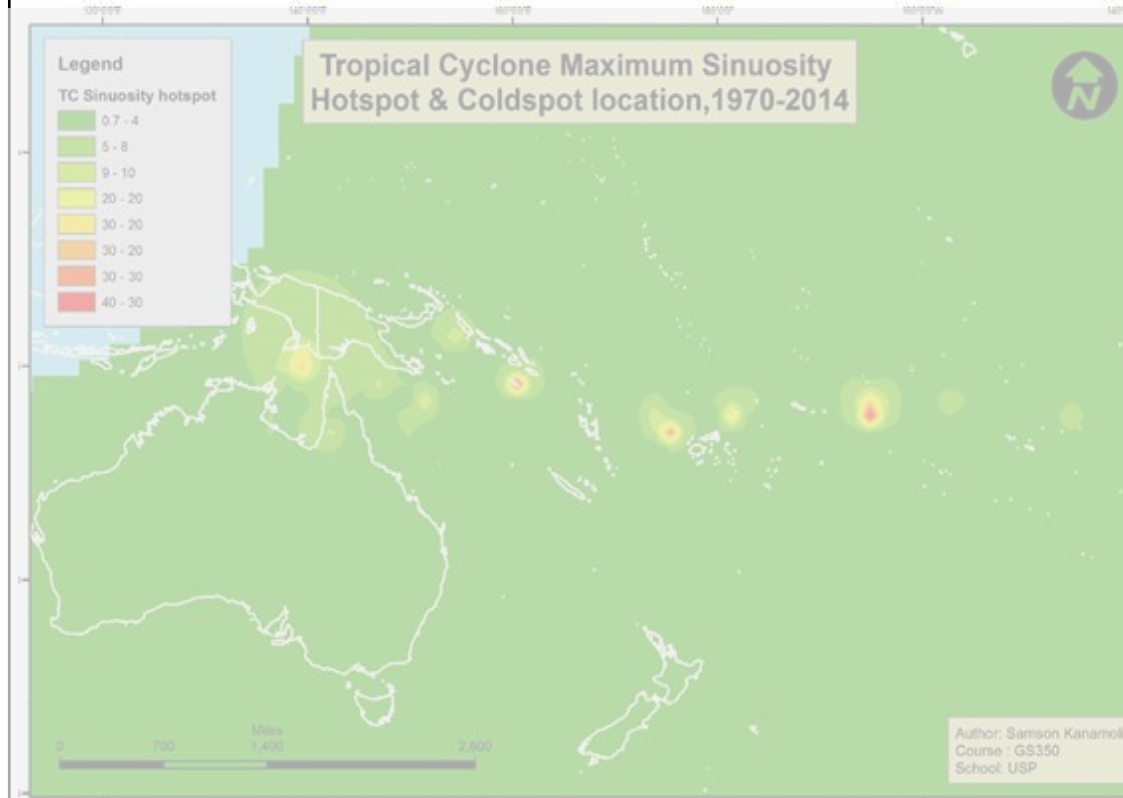**(S11003901, 2016)**

Distribution of Nightclubs/bars
(s11080768, 2016)

Regression analysis of Vodafone network
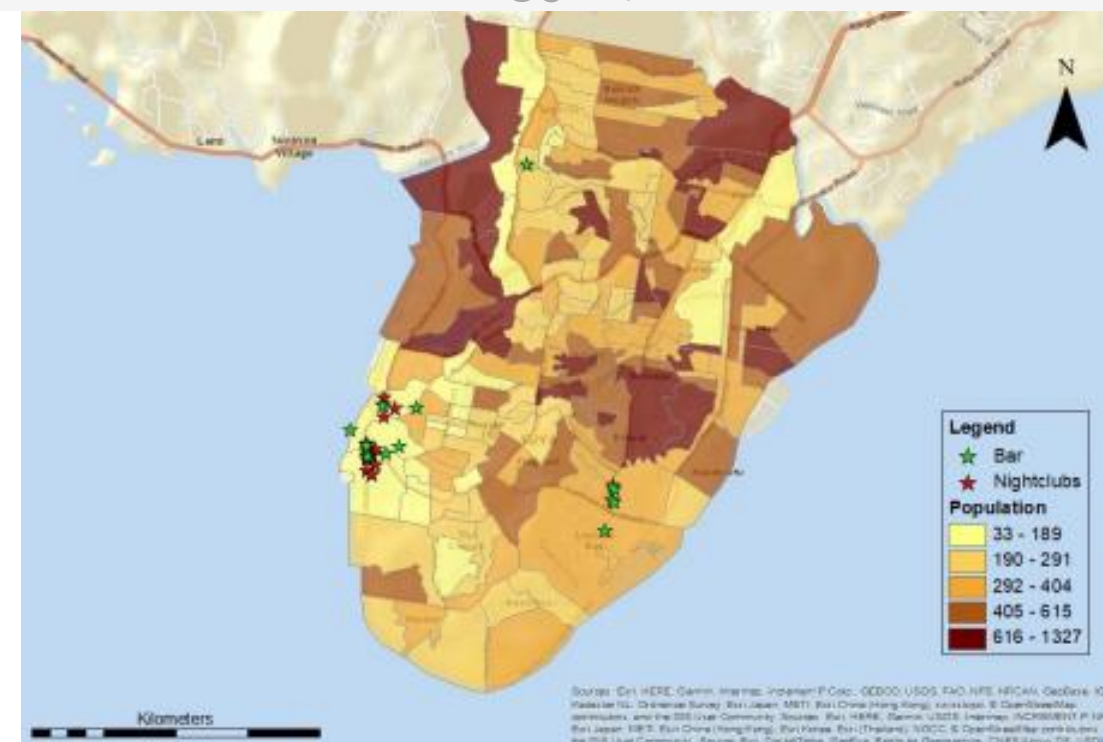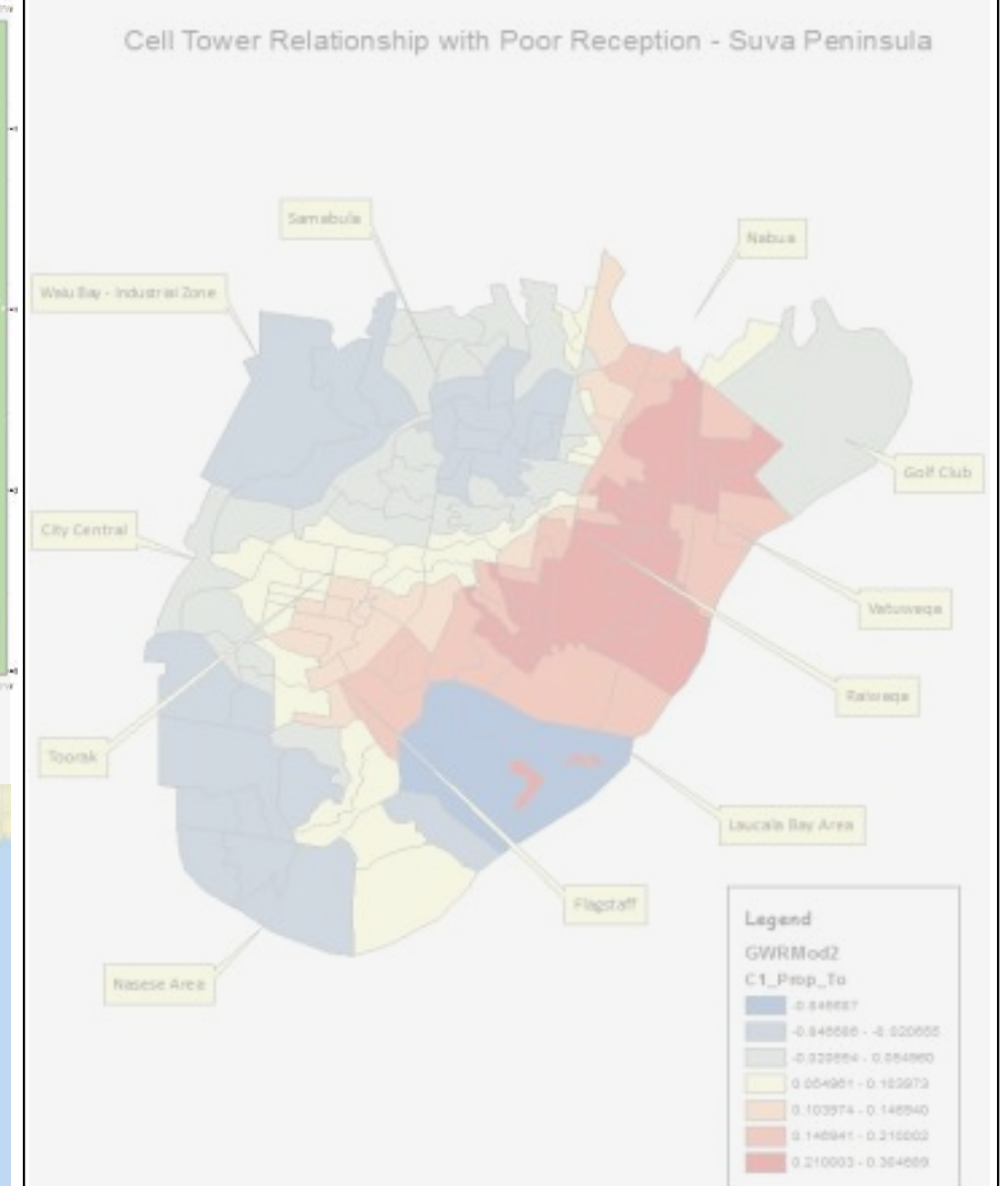**(s11136010 et al., 2018)**

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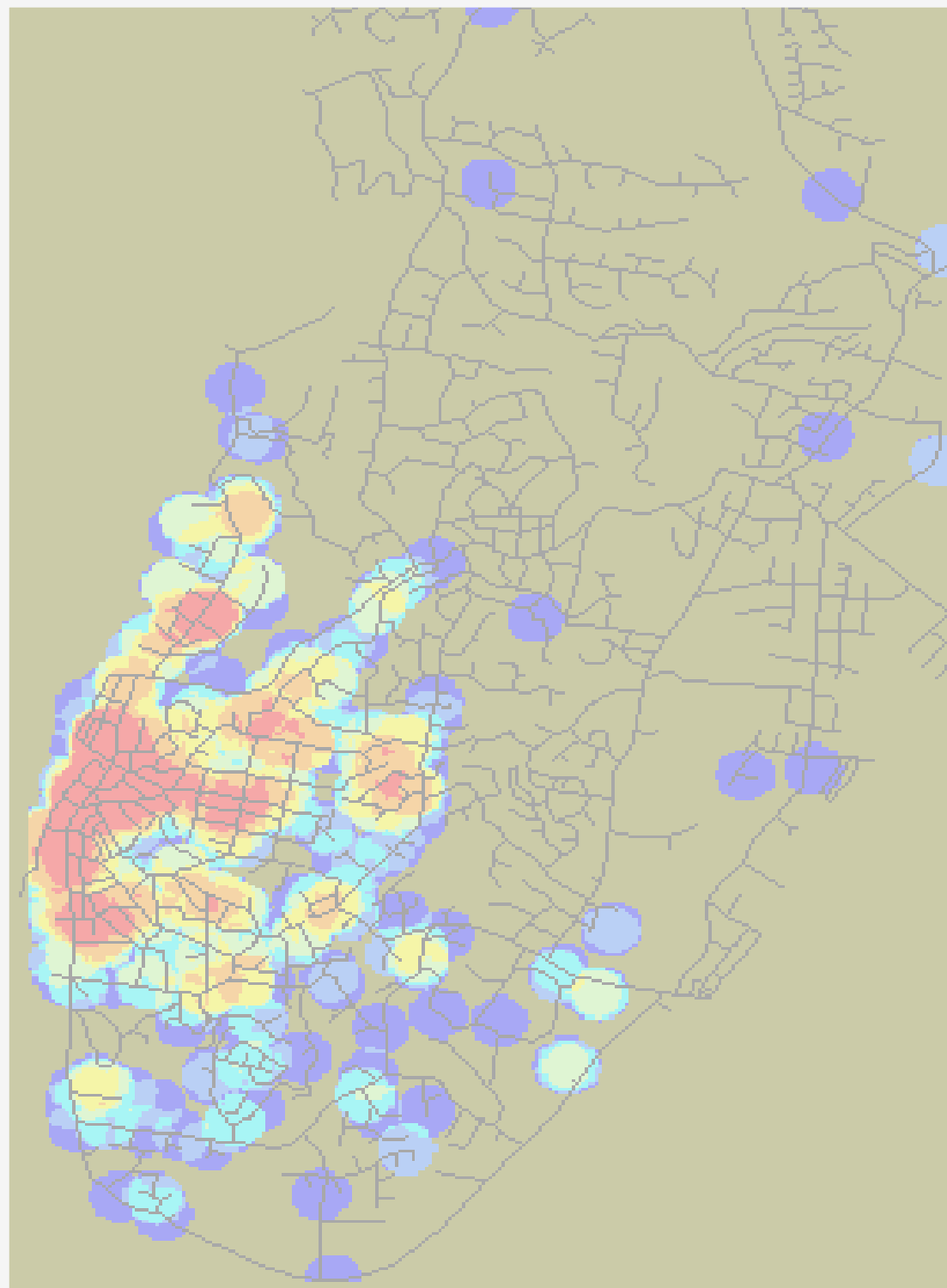(S11003901, 2016)

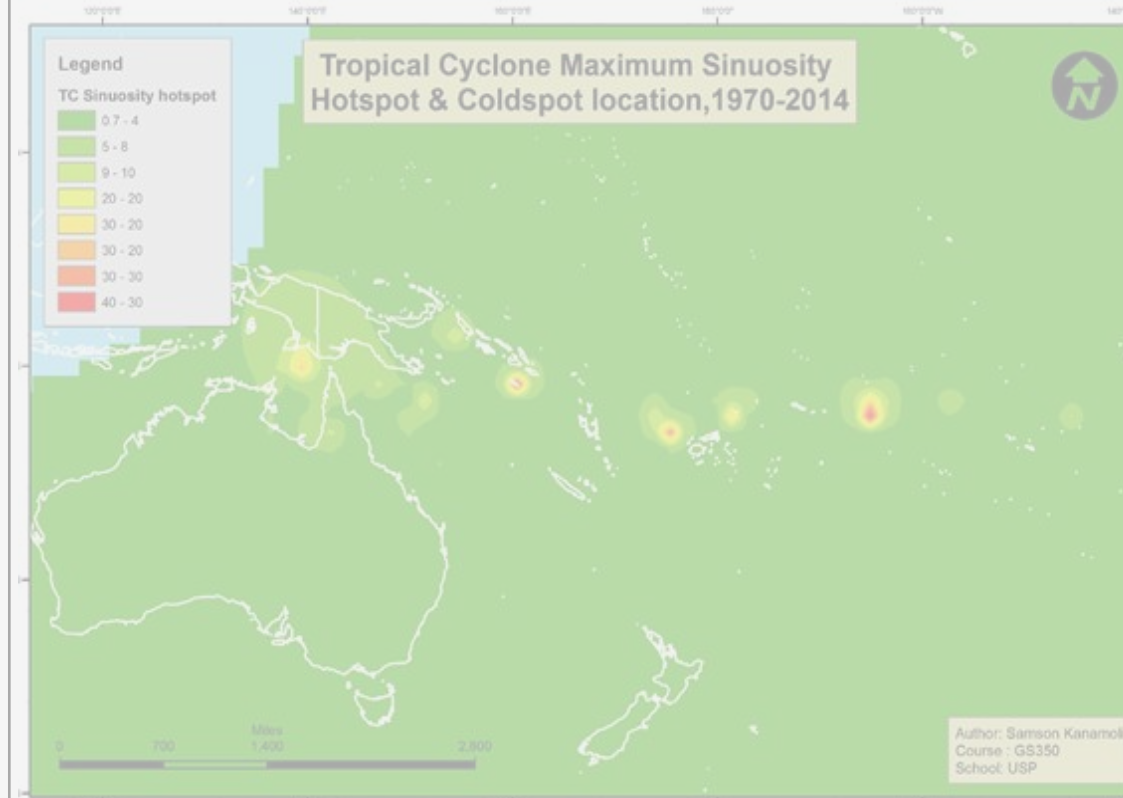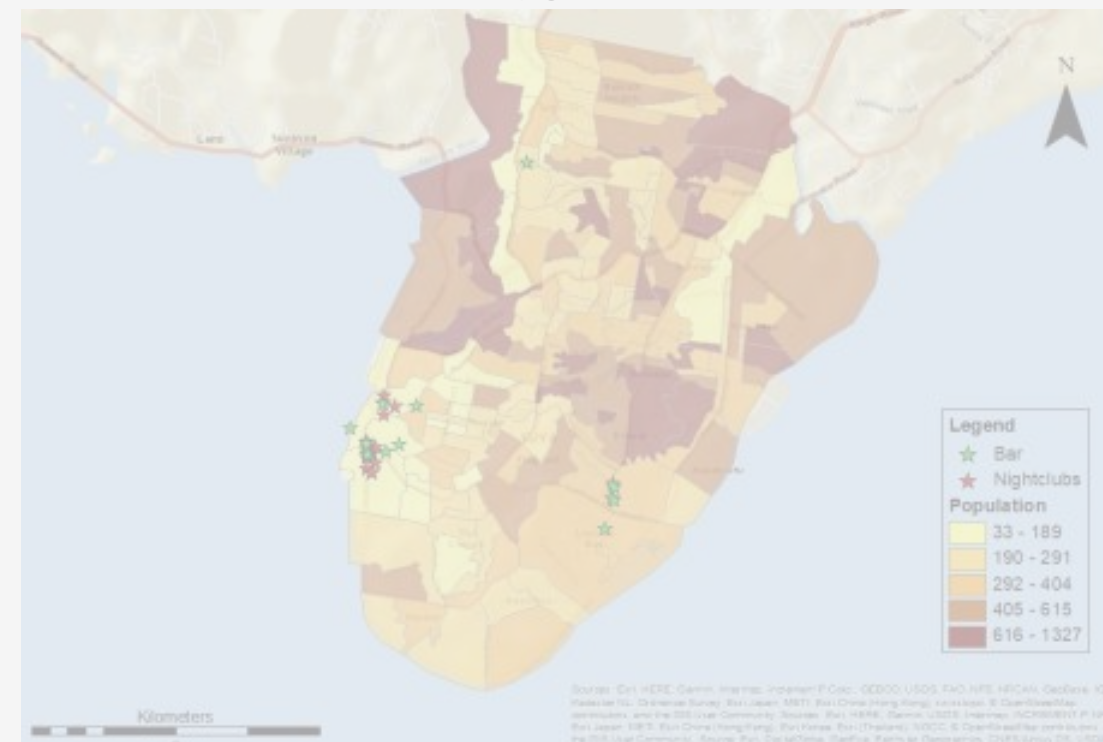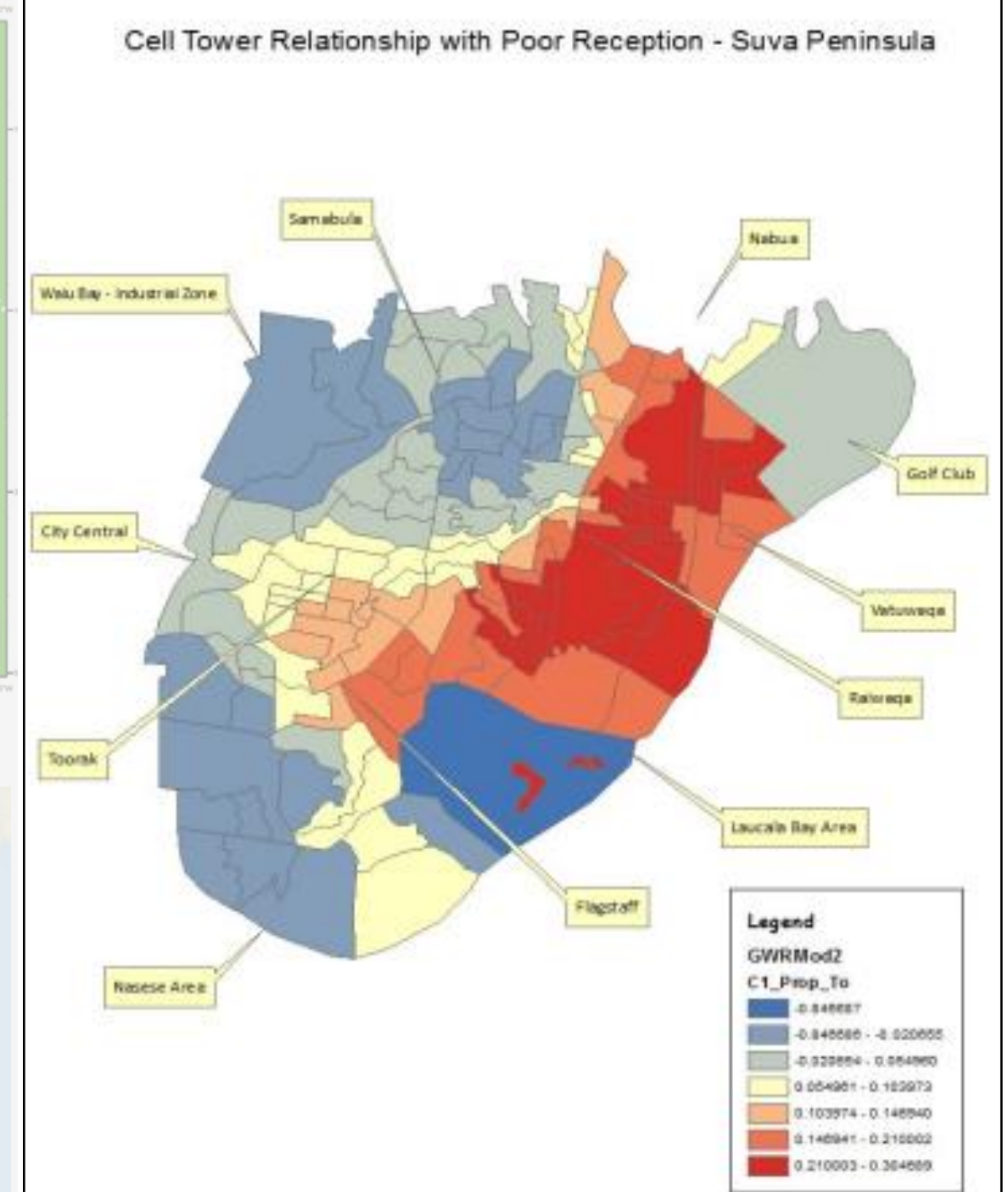Distribution of Nightclubs/bars
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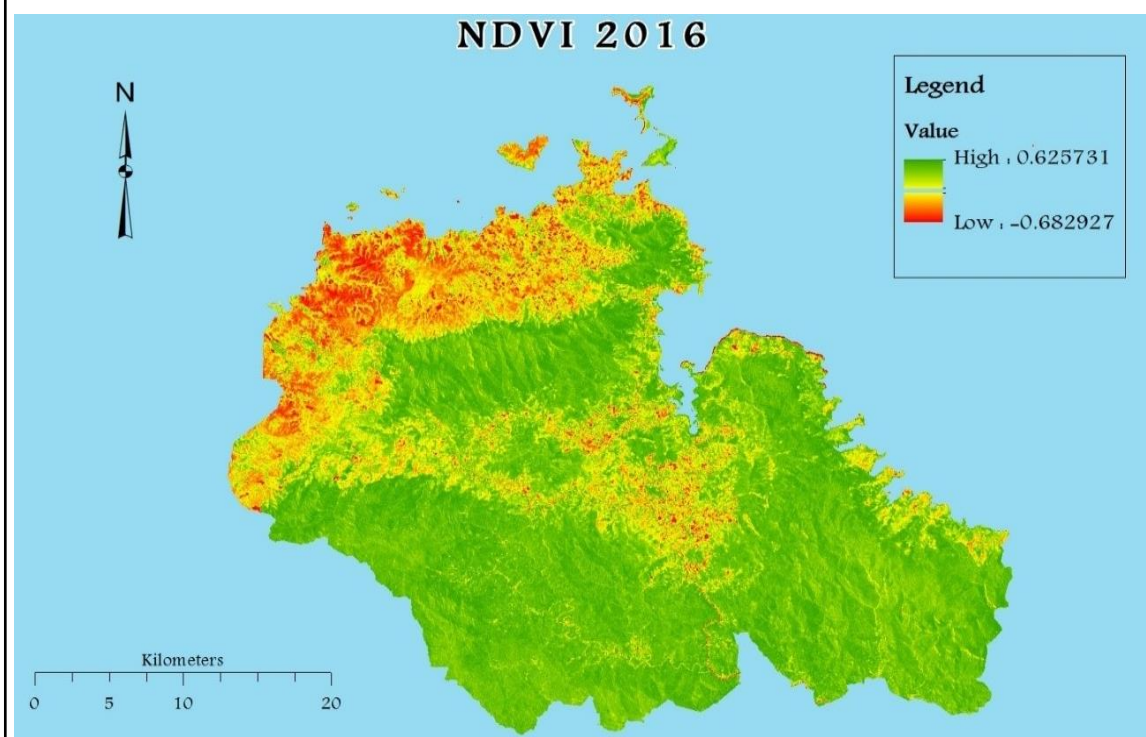Tropical cyclones sinuosity spatial patterns
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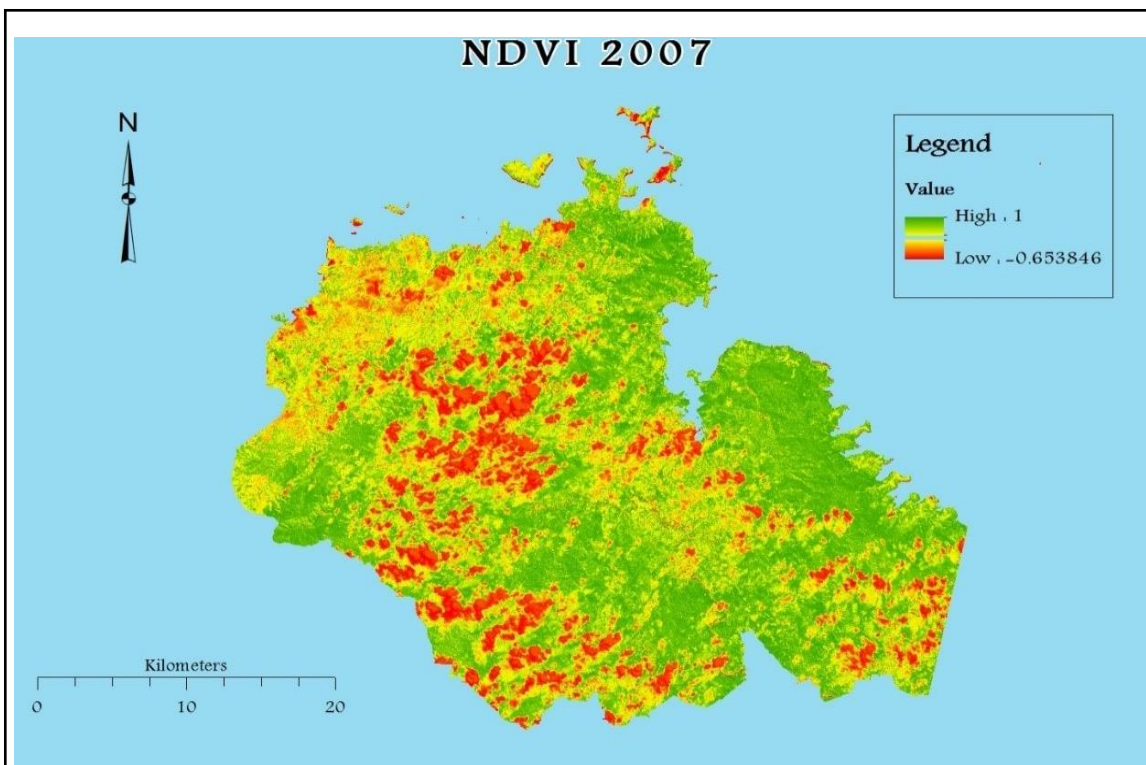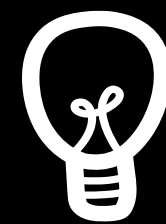Distribution of Nightclubs/bars
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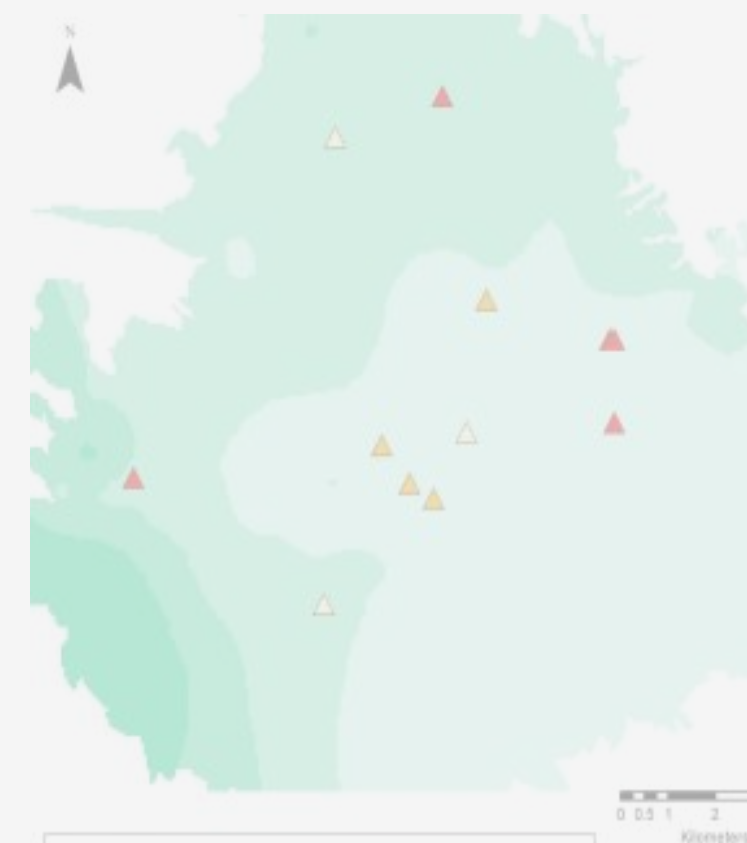(s11136010 et al., 2018)

Vegetation change detection using Normalized Difference Vegetation Index (NDVI)
(S11109086, 2016)
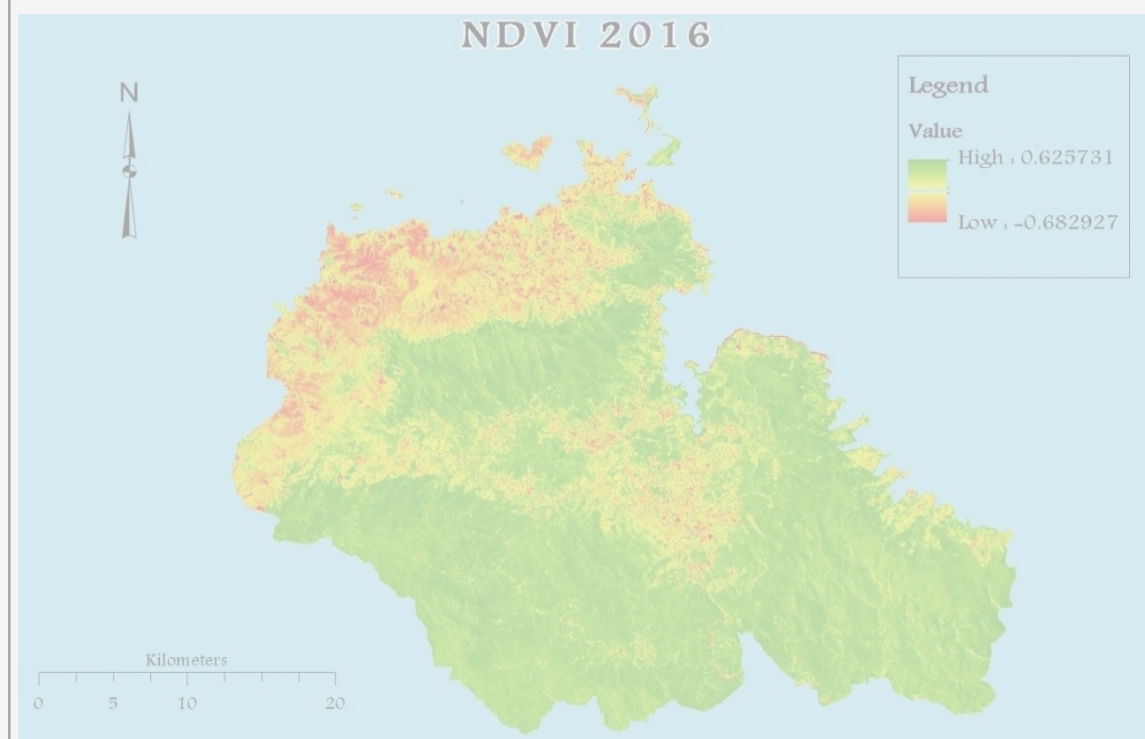
Spatio-temporal coastline change detection
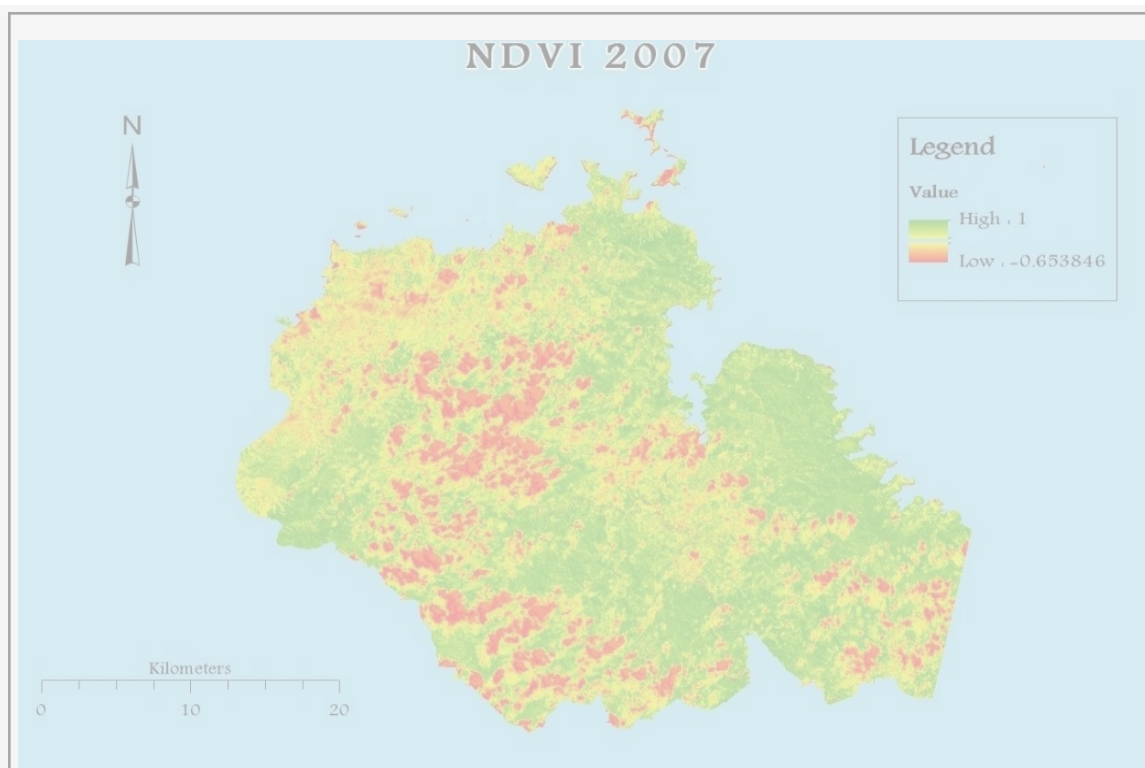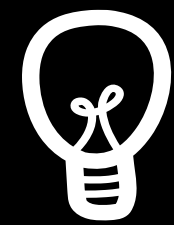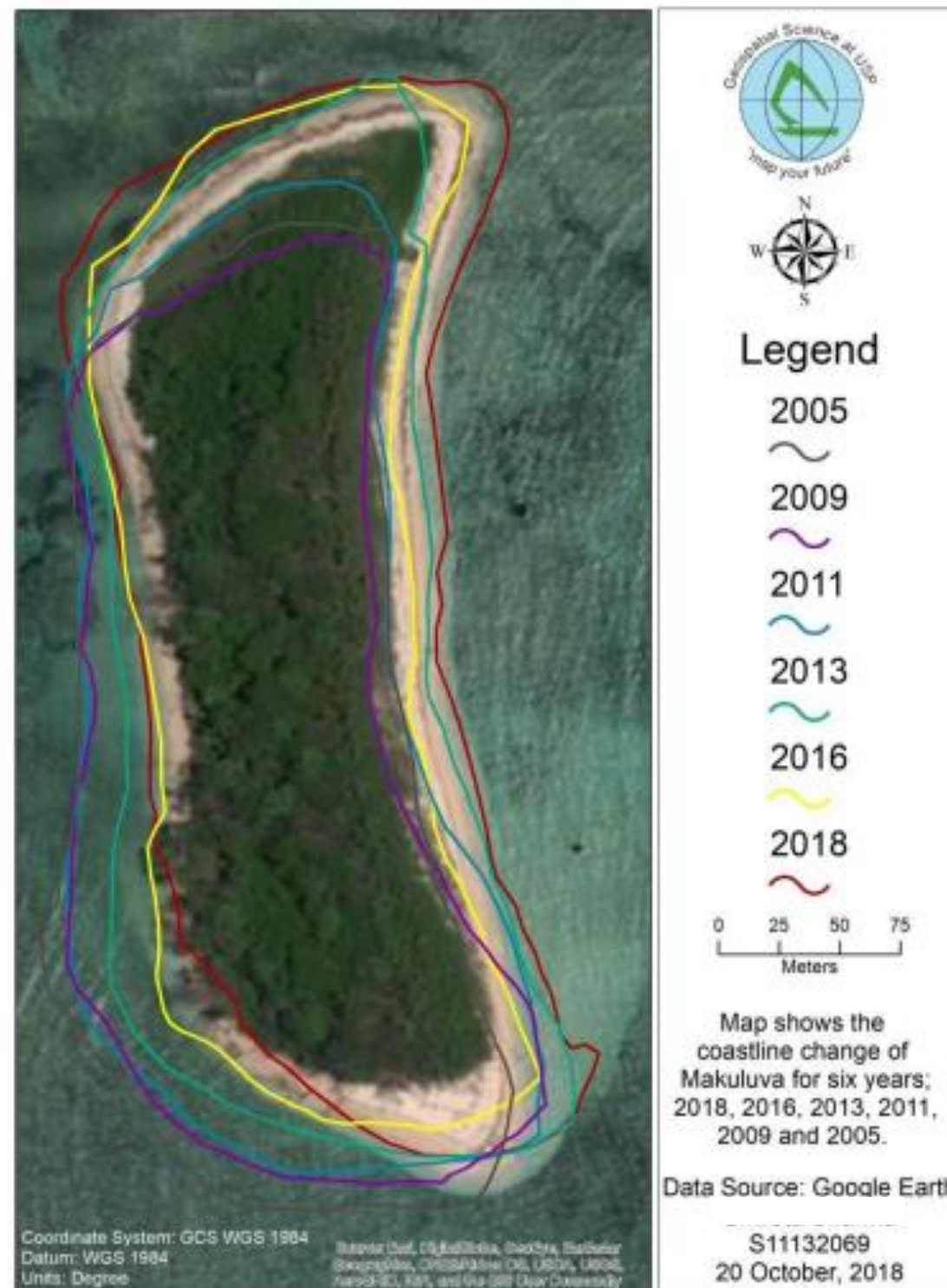(s11132069, 2018)

Flood simulation model (s11075811, 2018)

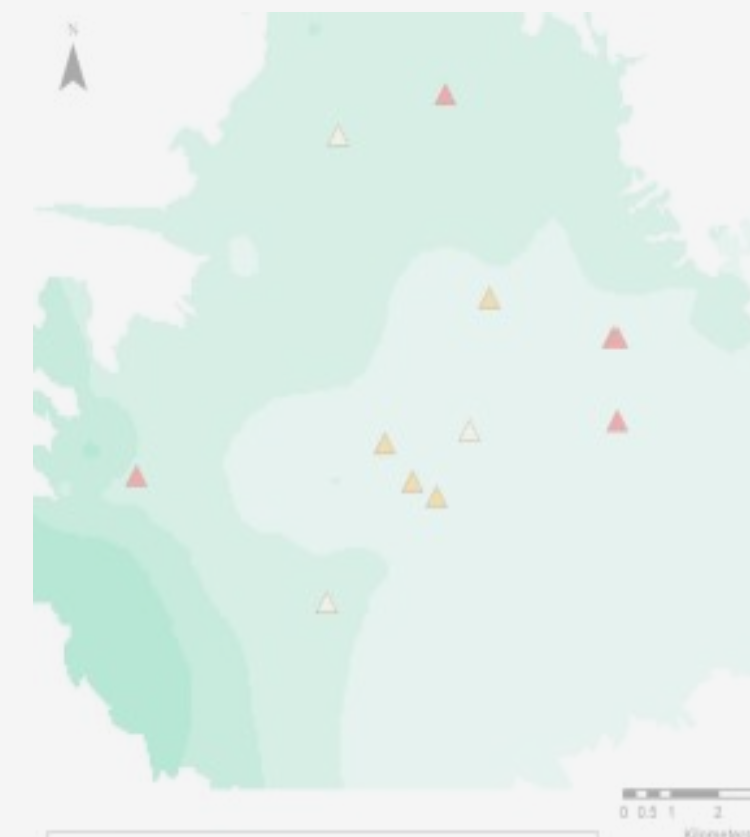Landslide risk mapping using Analytic Hierarchy Process (AHP)

Vegetation change detection using NDVI
(S11109086, 2016)

Spatio-temporal coastline change detection
(s11132069, 2018)

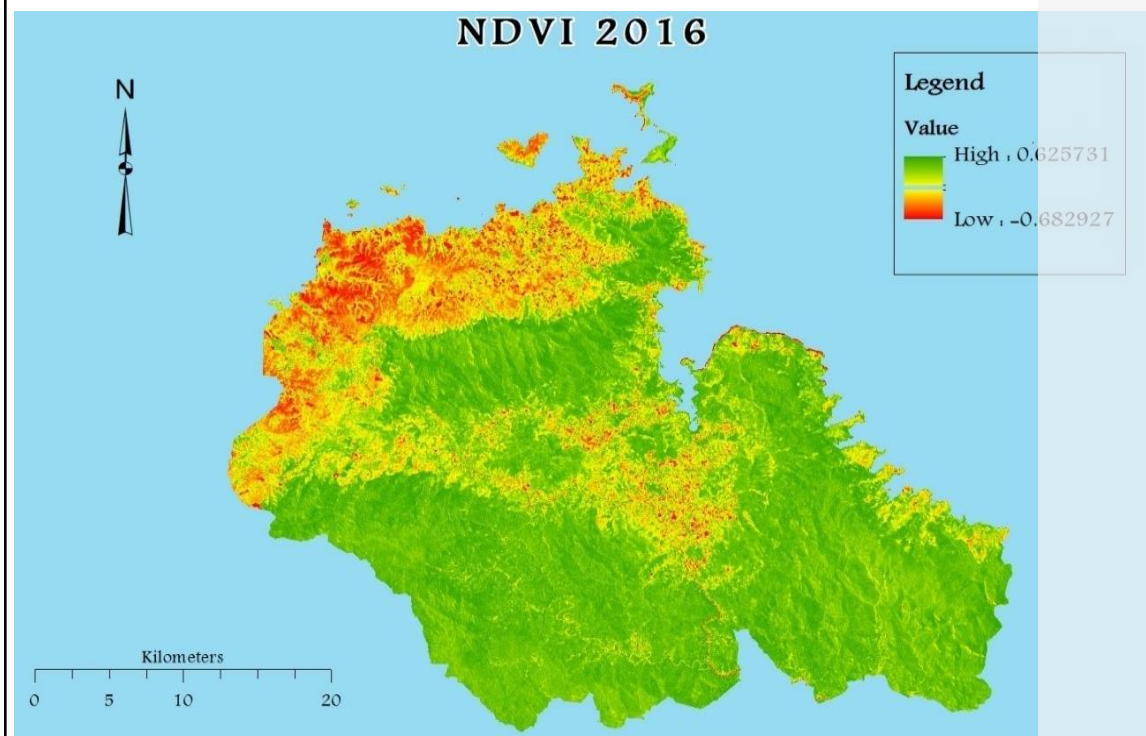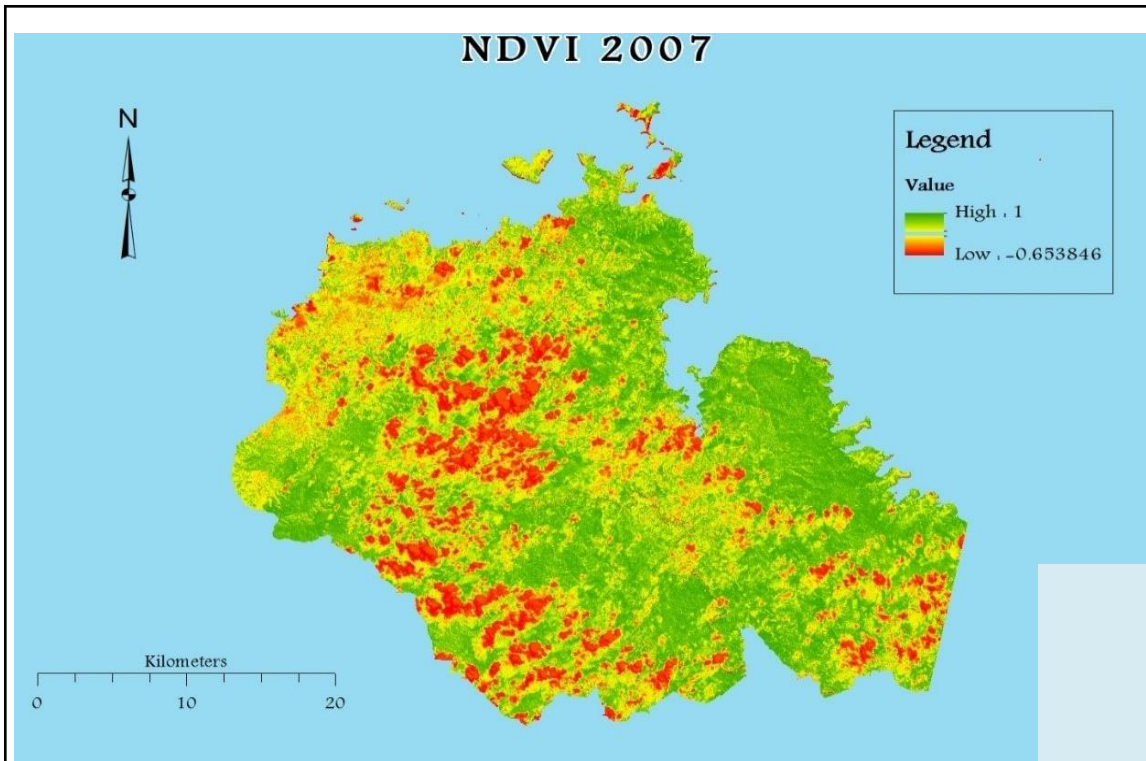Flood simulation model (s11075811, 2018)
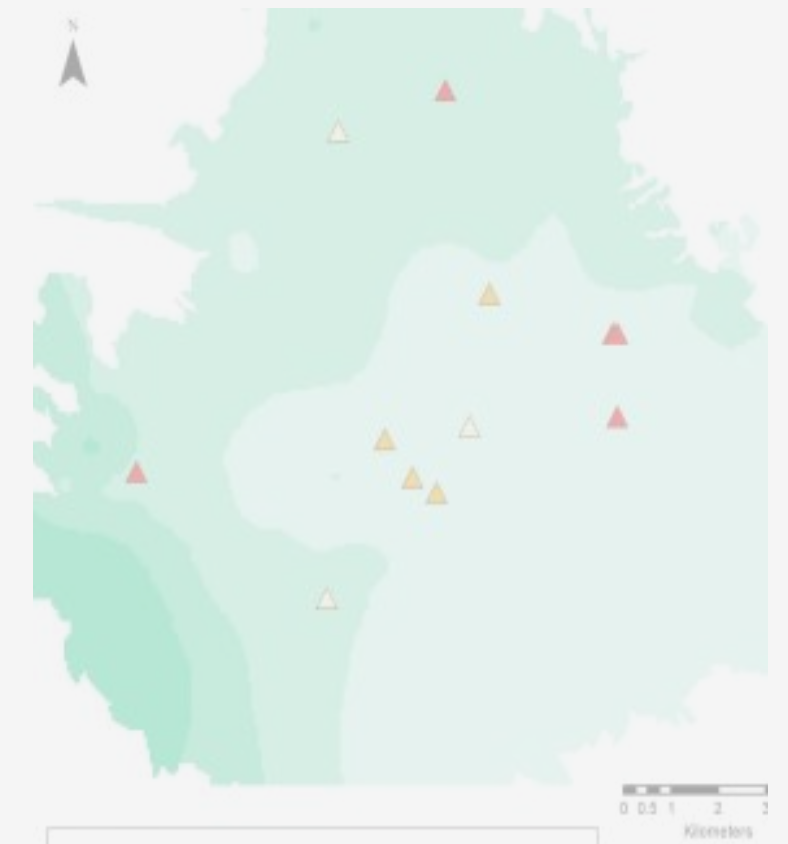
Landslide risk mapping using AHP
(S11143875, 2019)

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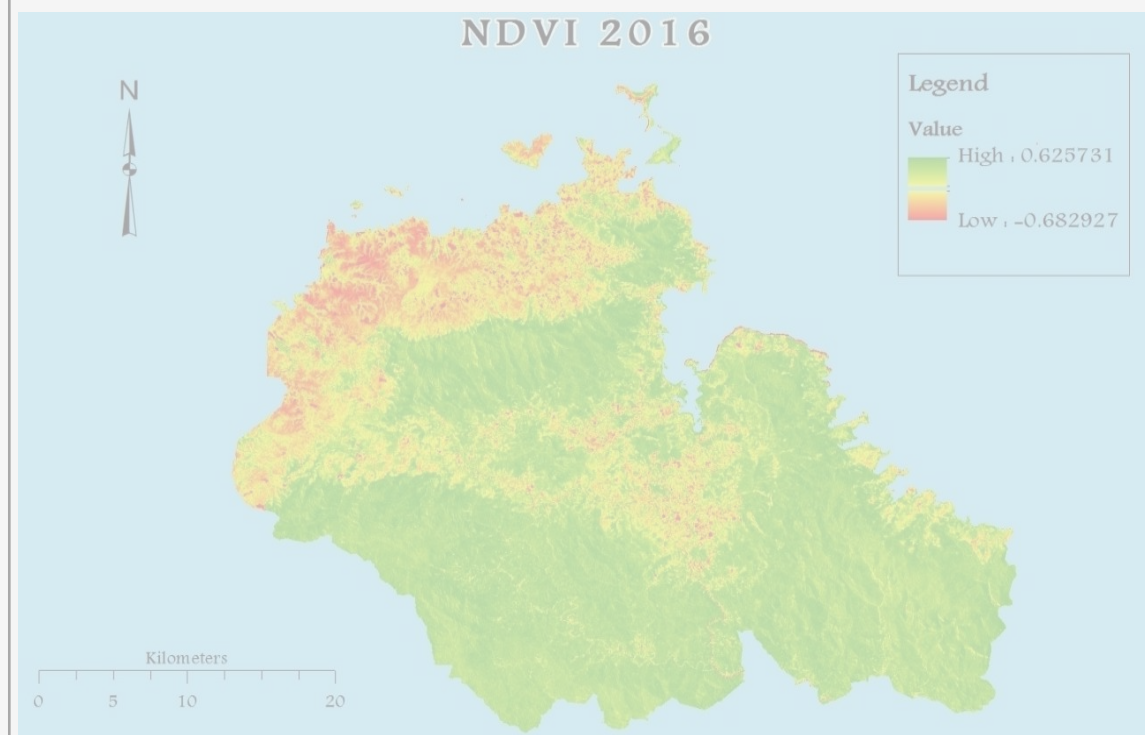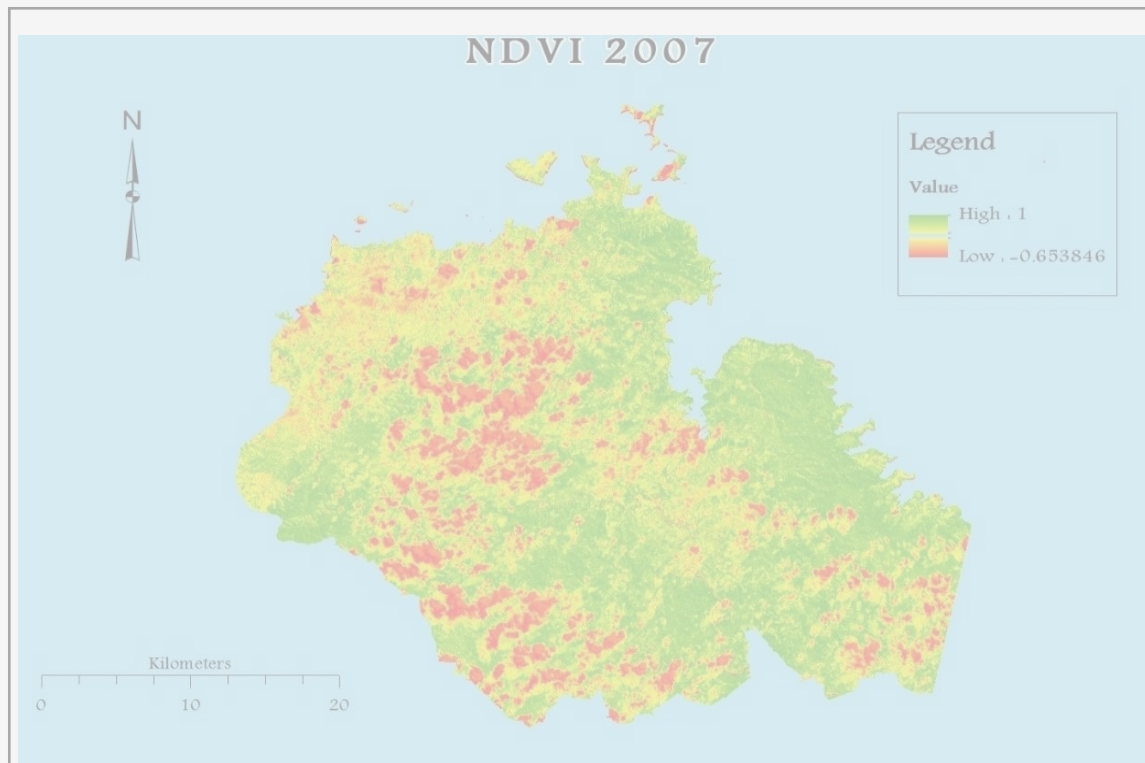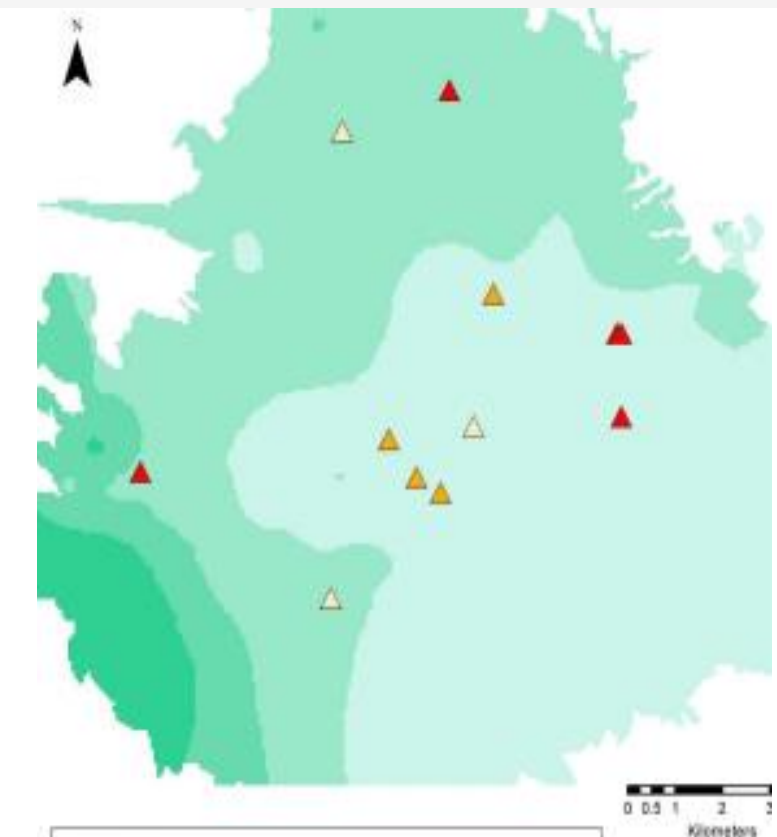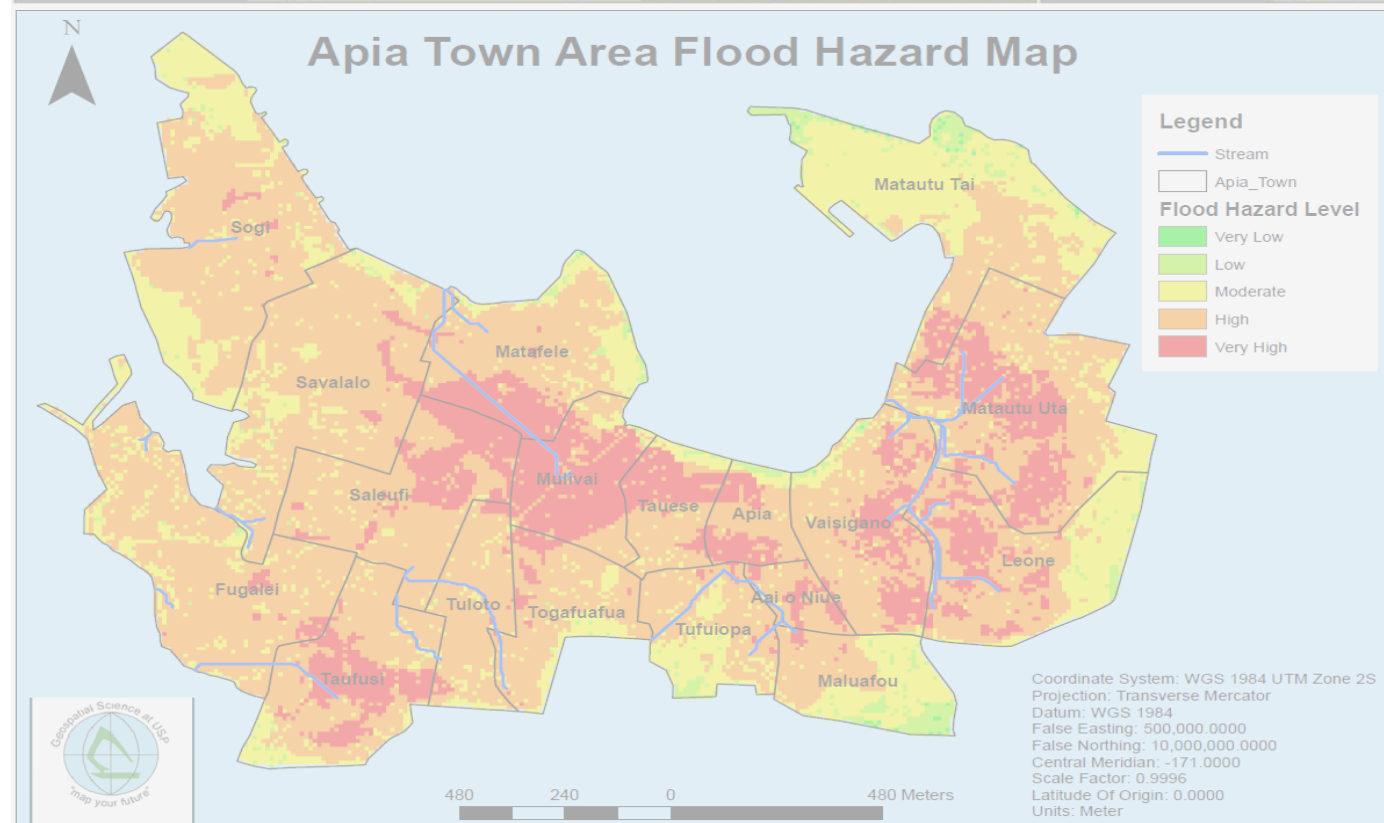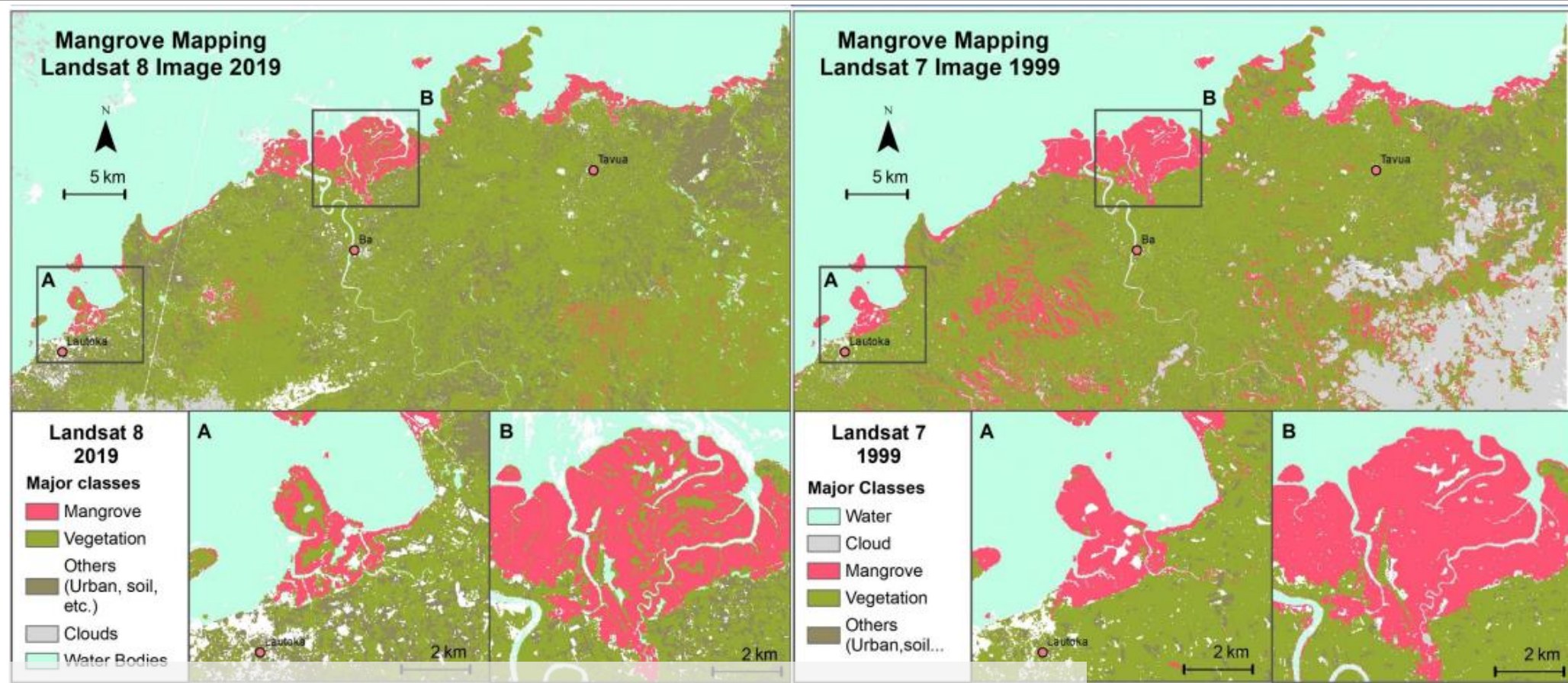
Landslide risk mapping using AHP
(S11143875, 2019)

Mangrove area change detection
(S11091518, 2019)

Urban growth monitoring
(S11148764, 2019)

Flood Hazard Mapping using AHP
(s11149163 et. al, 2022)

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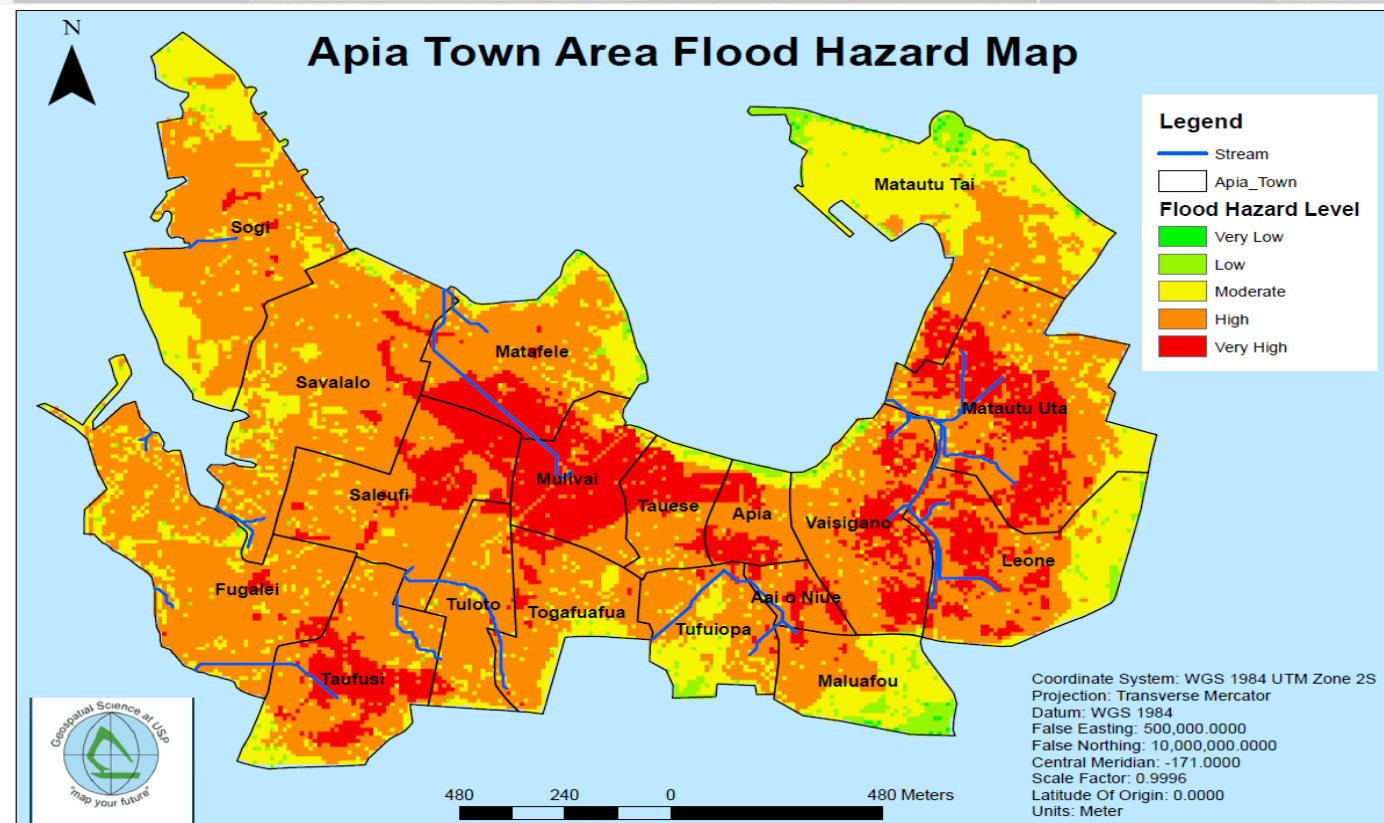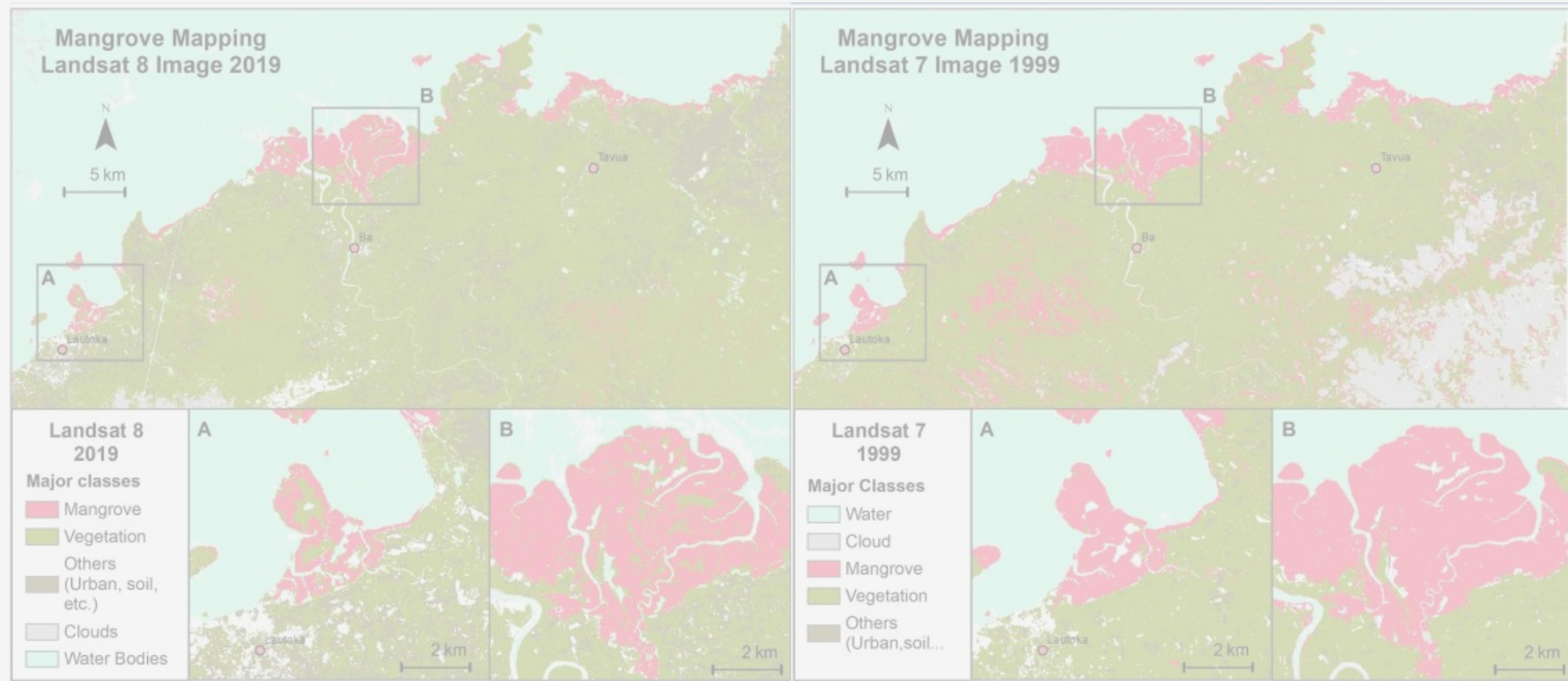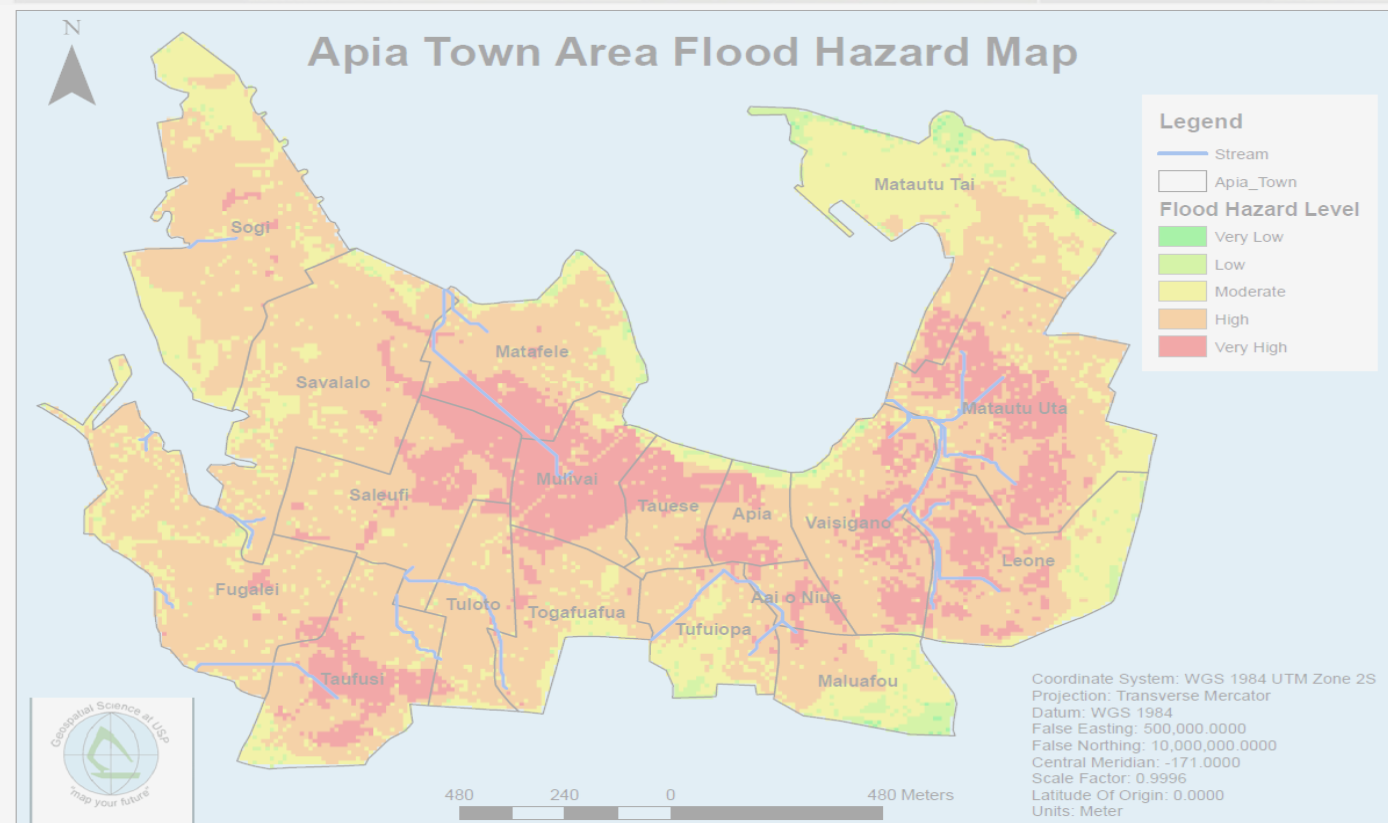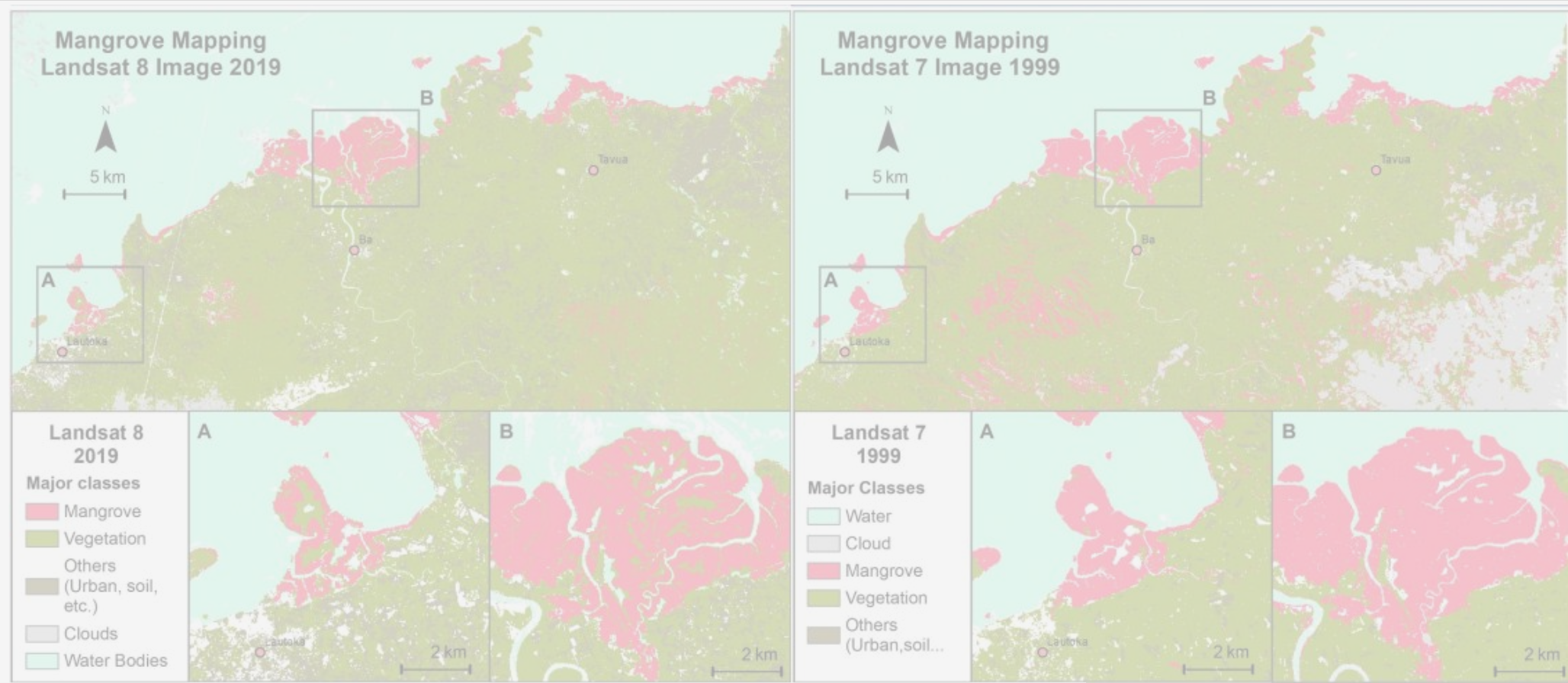
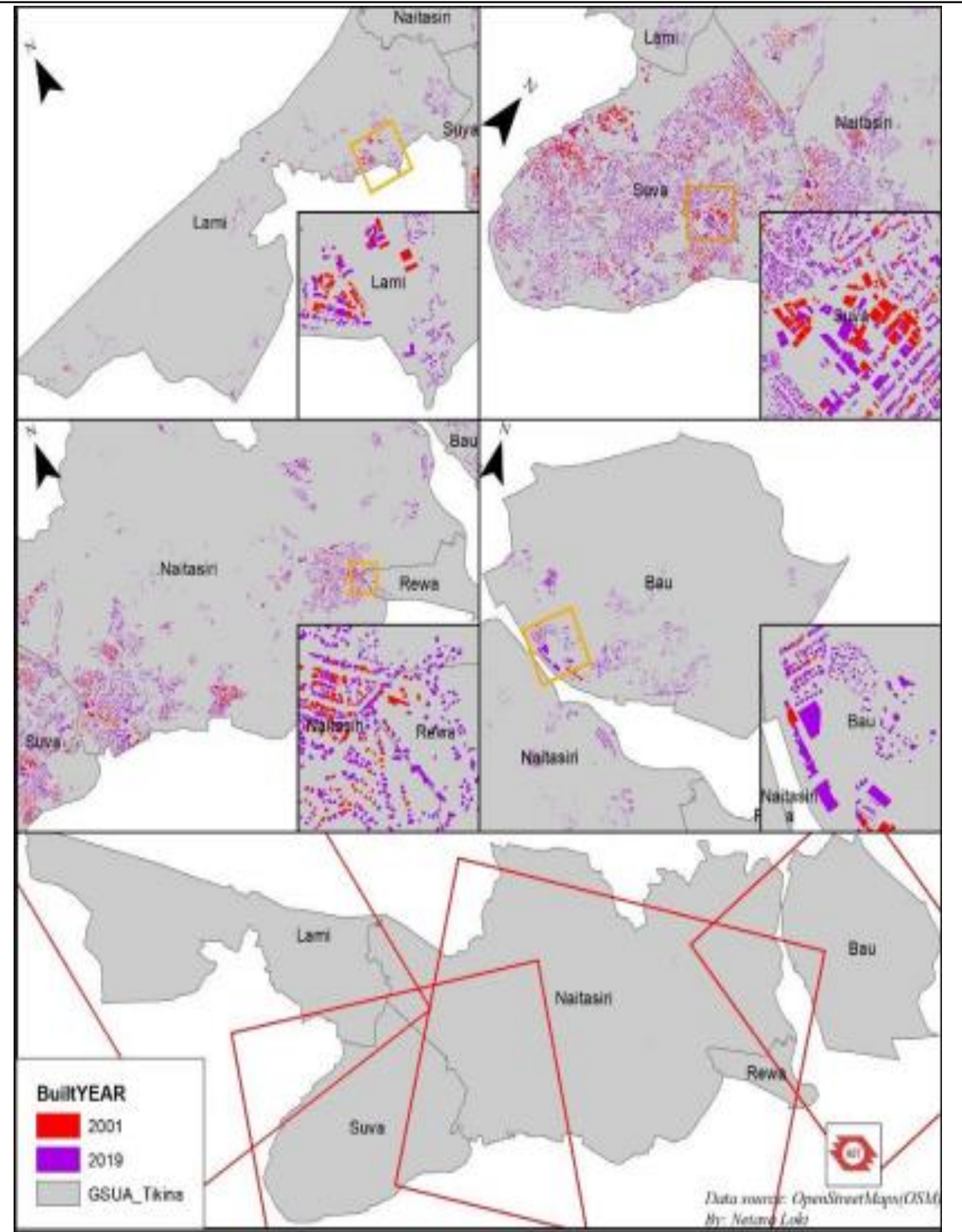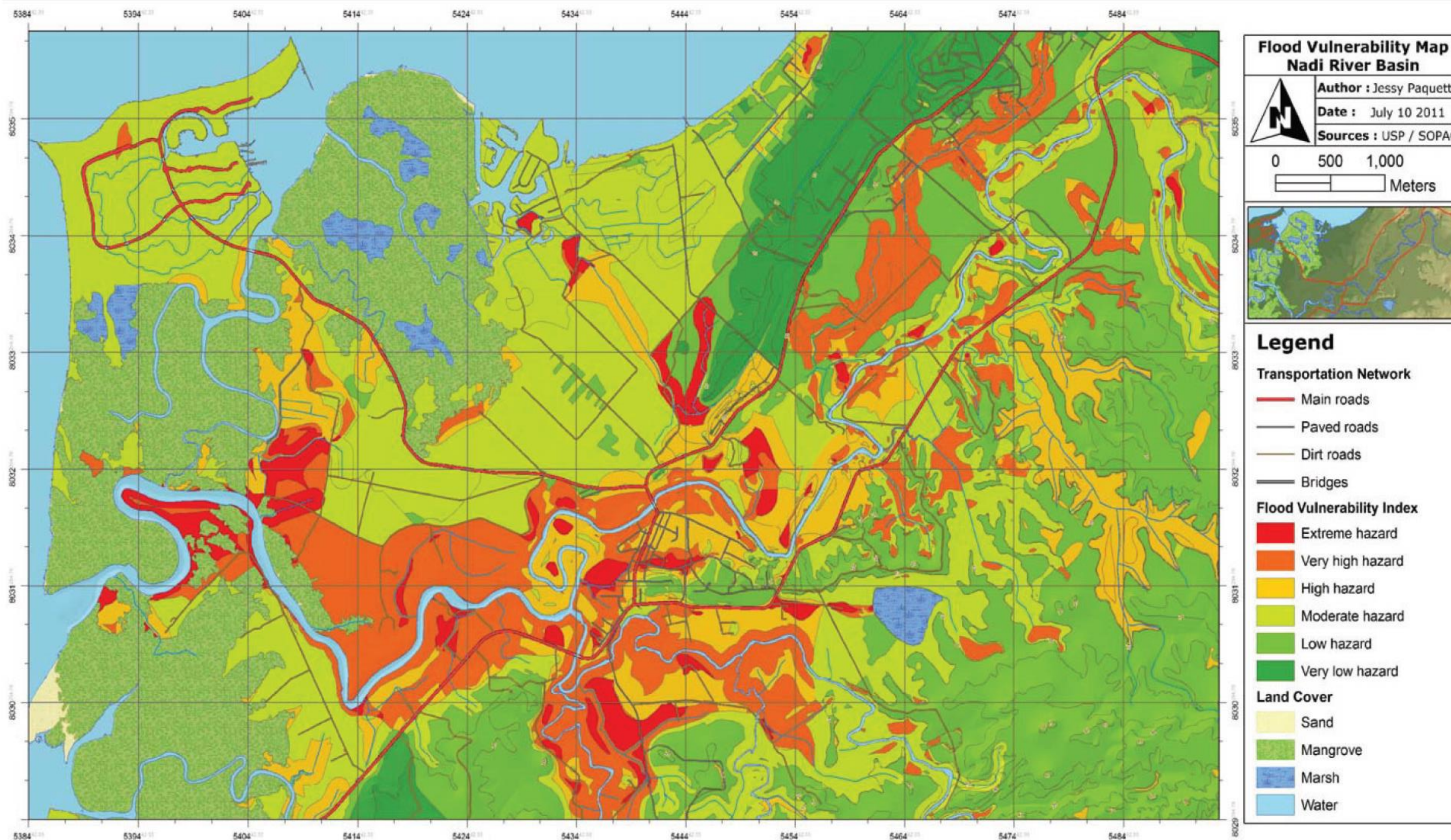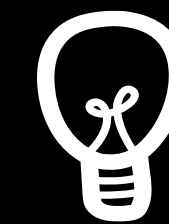Flood Hazard Mapping using AHP
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Urban growth monitoring
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Flood Hazard Mapping
using AHP
(s11149163 et. al, 2022)

Appendix X: Flood vulnerability map (with corrections)

Looking into the Future

Survive

Right now, we have **one** contracted senior staff in GIS / RS

The Pacific Islands region has the need for more capacities in Geospatial Science applications and contents.

Governments, Regional and International Organizations, NGOS and Humanitarian Organizations require more, better skilled and constantly improving professionals and leaders in Geospatial Science applications and contents.

USP (and FNU) have the potentials to contribute to the geospatial science needs of the Pacific Islands region.

We can train professionals, we can introduce post-graduate programs, but we need your support.

VINAKA