

Participatory Mapping of Greater Amanzule Wetland Resources

ATLAS

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Introduction

The Greater Amanzule Wetland (GAW) is located in south-western Ghana and falls within three (3) district assemblies namely Jomoro and Nzema East Municipal Assemblies and the Ellebelle District Assembly. It covers approximately 50,000 hectares of land and water areas. The area is situated between latitude 4° 53' and 4° 46' North and longitude 2° 00' and 2° 05' west. The GAW falls within the wet-evergreen high forest zone of Ghana and is a biologically diverse system comprising tropical/terrestrial forests, swamp forests, mangrove forests and the Ankobra river estuary.

The Greater Amanzule Wetland (GAW) is a key biodiversity area characterized by tropical/terrestrial forests, swamp forests, bamboo and mangrove forests mostly comprising *Avicennia germinans*, *Rhizophora mangle* and the *Laguncularia racemosa* mangroves. The fauna composition include IUCN listed endangered species such as the Geoffroy's black-and-white Colobus (*Colobus vellerosus*), Diana monkey (*Cercopithecus Diana*), African Dwarf Crocodile (*Osteolaemus tetraspis*), Albizia ferruginea, Red Colobus (*Colobus badius*), White-naped mangabey (*Cercocebus torquatus*), Hooded vulture (*Necrosyrtes monachus*), the endemic frog species *Morerella* cf. *cyanophthalma*, the Leatherback turtle, the Olive Ridley turtle, the Loggerhead turtle, Home's Hinge-back tortoise and the West Africa Dwarf crocodile. In addition, there are over 40 mammal species, 78 bird species and 17 amphibians and reptile species identified in the area. Twenty-seven (27) estuarine fish species, comprising 16 marine, 4 brackish water and 7 freshwater fishes including two shrimp and four crab species also inhabit the wetland ecosystem.

The resources of the GAW contribute significantly to the livelihood and provide critical ecosystem services to majority of the community members. Unfortunately this critical wildlife habitat is threatened by over-exploitation of timber for housing construction; over harvesting of wetland resources, especially mangroves for fish smoking; urbanization; and increasing soil sealing for infrastructure development.

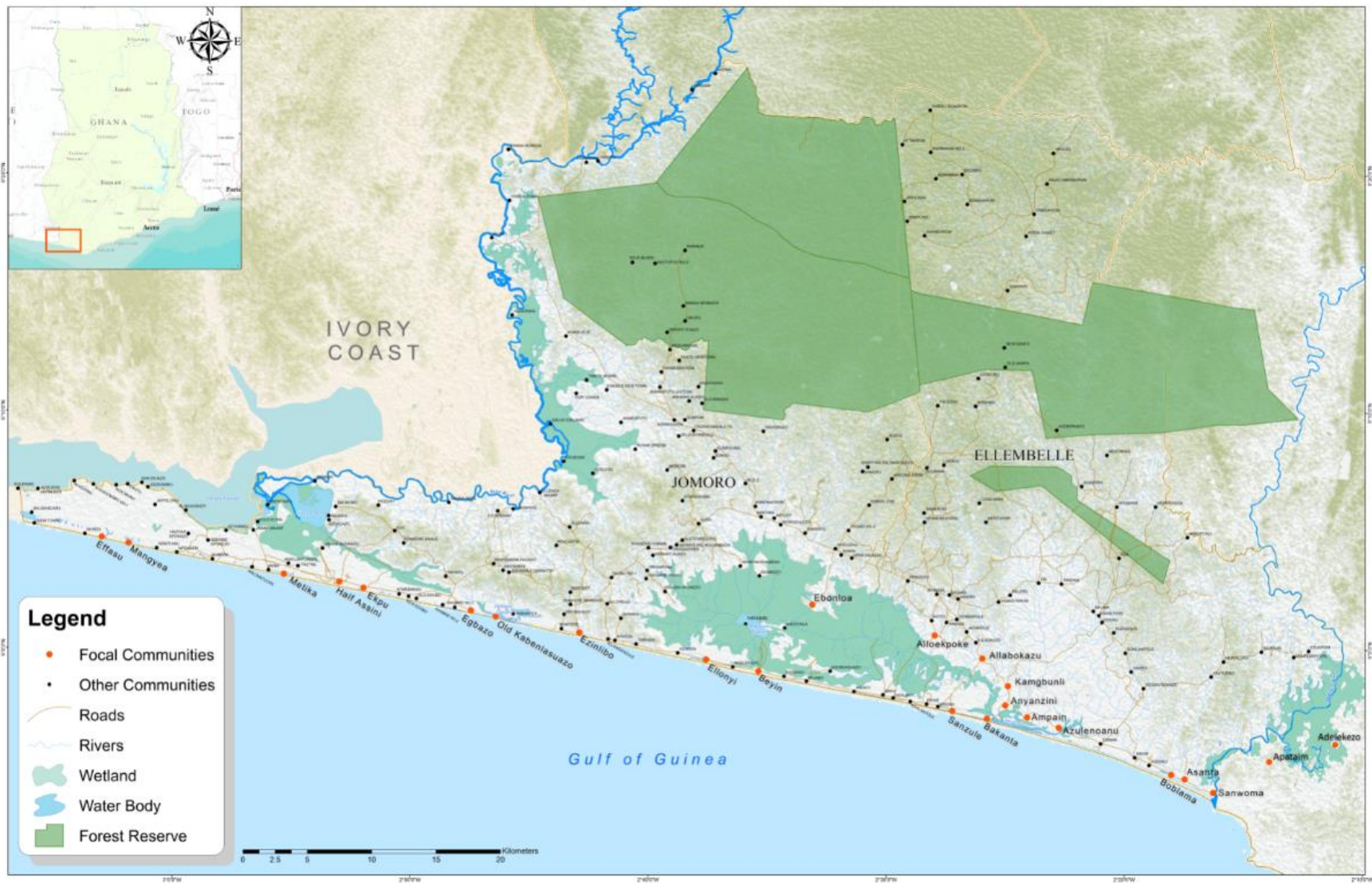
Objective

The purpose of this mapping exercise is to assess the extent and distribution of wetland resources within the Greater Amanzule wetlands to provide baseline data to support planning and management decision making.

Description of materials and methods

The assessment was carried out using participatory mapping processes. This involved the use of digital orthophotos of the management area taken in 2005 by Ghana Survey Department. Due to the limited coverage of the orthophotos, images from Google Earth were also used to supplement the existing data. In addition to the images, other ancillary data like shapefiles of rivers and wetlands were deployed in this mapping exercise. The images were printed at a scale of 1:10,000 on A0 (33.1 X 46.8 inches) flexy (canvas) material.

Participatory Mapping of Wetland Resources of the Greater Amanzule Wetland Complex- Altas



Participatory Mapping of Wetland Resources of the Greater Amanzule Wetland Complex- Altas

In each of the focal communities, residents and other stakeholders were mobilized to participate in the mapping exercise. With the help of permanent markers, residents delineated mangrove extent on the maps based on discussions and consensus among them.

The maps were photographed and geo-referenced into a GIS software environment. Using visual interpretation and guided by the result of the participatory mapping, the extent and distribution of wetland resource and other targeted features were digitized off the 2005 orthophotos and Google images. In addition, a GPS survey of the area was conducted to ground truth and ascertain the validity of the participatory

mapping. The Ground truthing involved community members who relied mostly on the mangrove ecosystem for their livelihood. Community assistants and data collectors surveyed specific areas within the wetland with Garmin GPSMAP64 handheld GPS units and mobile devices running the Geo Tracker App. Data from the field were used as training samples for 'post processing' the wetland maps.


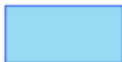


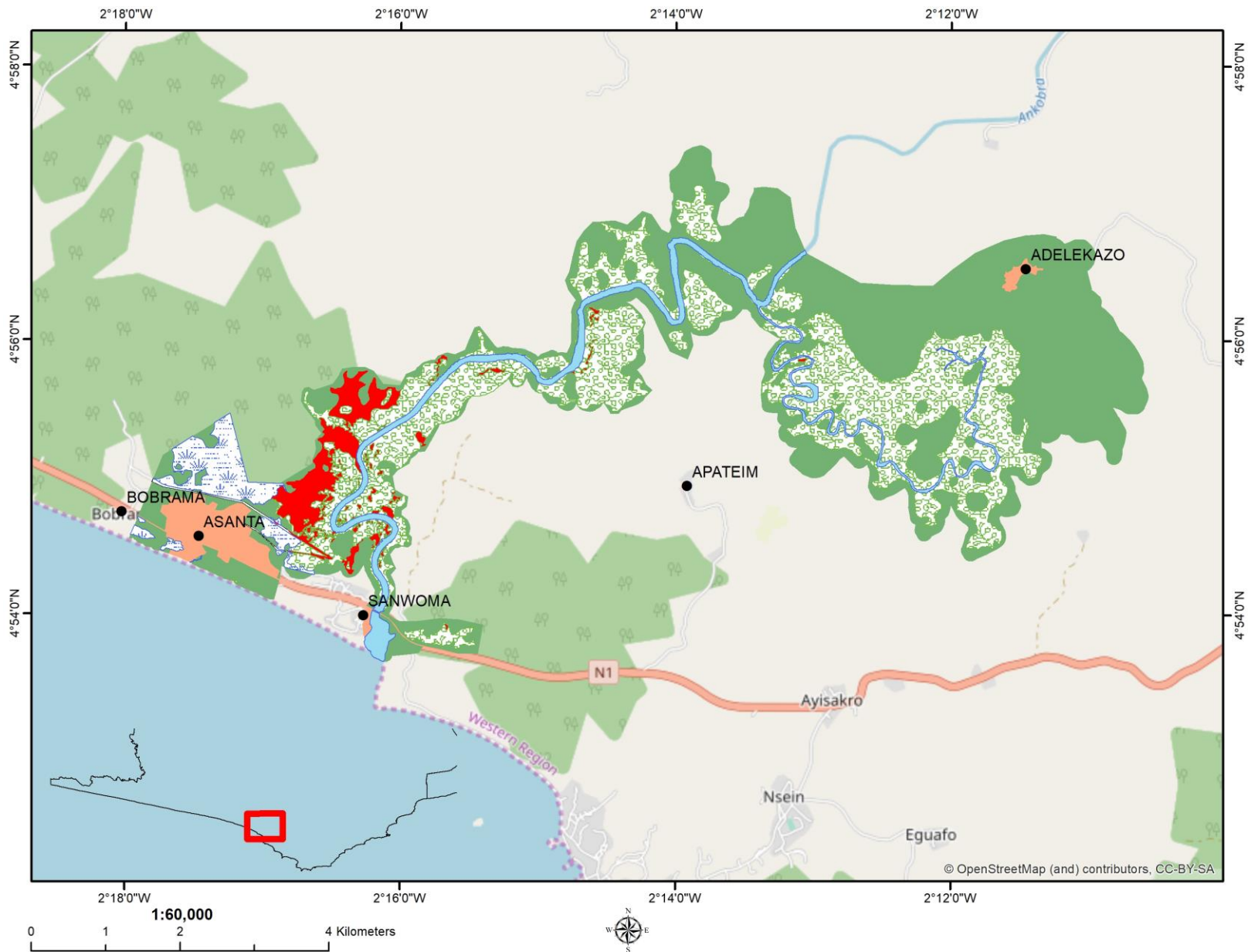
Results

The land use land cover information was extracted by visual interpretation of the aerial photos. On screen digitizing was employed to delineate the wetland resources into 10 classes namely (healthy) mangroves, degraded mangrove stands, swamp forest, degraded swamp forest, other vegetation, water bodies, farms, grassland, built up and bare areas.

The GAW area is endowed with vast areas of fresh water swamp, mangroves and grassland. The distribution of these resources is determined largely by the terrain and hydrology of the area as well as human pressure through urbanization. Out of a total of 8631.86 hectares of area mapped, 1,553.44 hectares of mangroves were mapped constituting about 18 per cent of the area mapped. Over 177 hectares of mangroves have also been lost to natural and anthropogenic factors. Four species of true mangroves and some mangrove associates such as *Avicennia germinans*, *Rhizophora mangle*, *Laguncularia racemosa* and *Conocarpus erectus*. Adjacent to the mangrove ecosystems are mostly fresh water swamp forest. Characteristic of the swamp forest is the mix of raffia, palm trees, rattan and other economically important timber species. Surrounding the wetlands are built up areas, farms and some other shrubs and other vegetation which are gradually giving way to cocoa farms and rubber plantations.

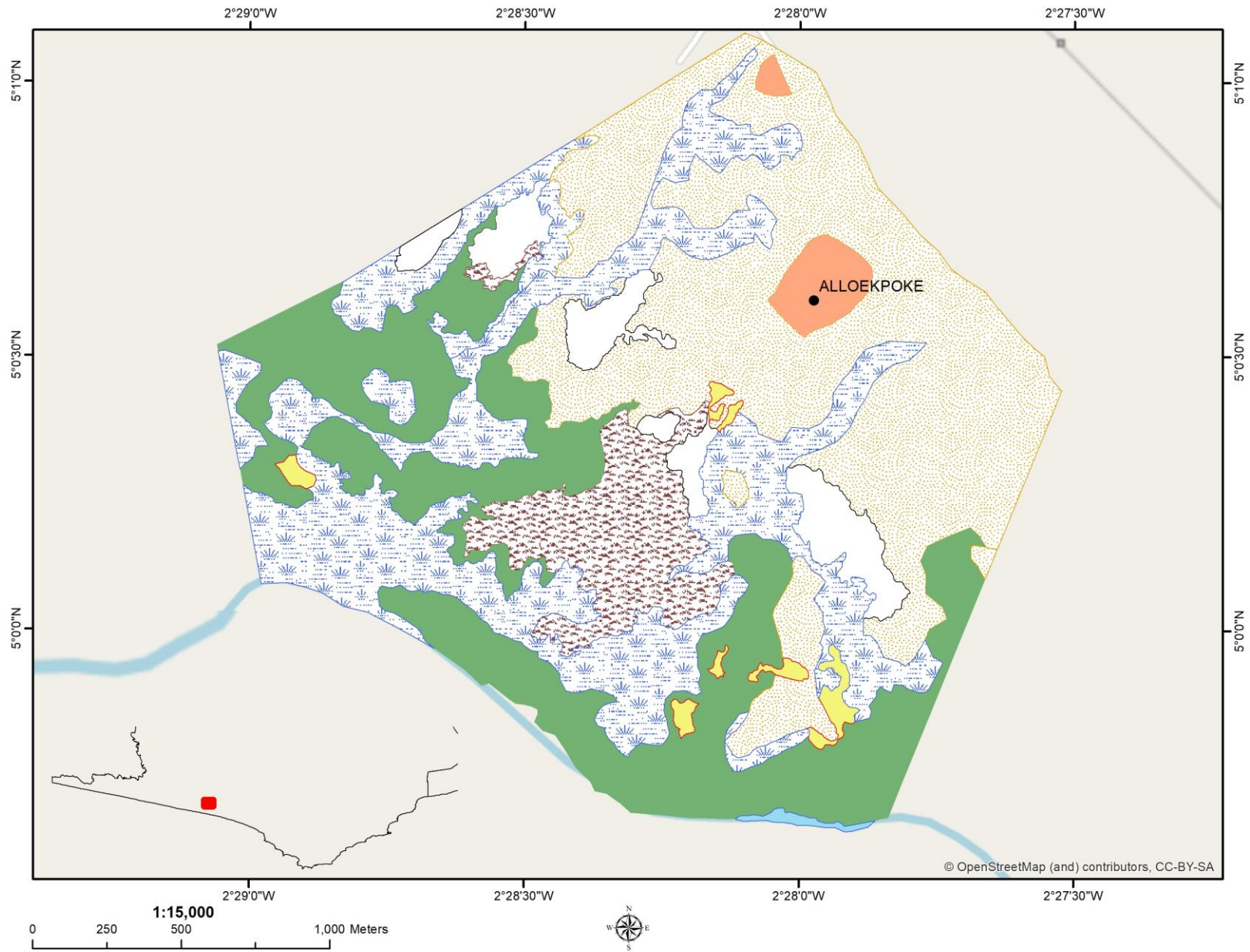
Legend

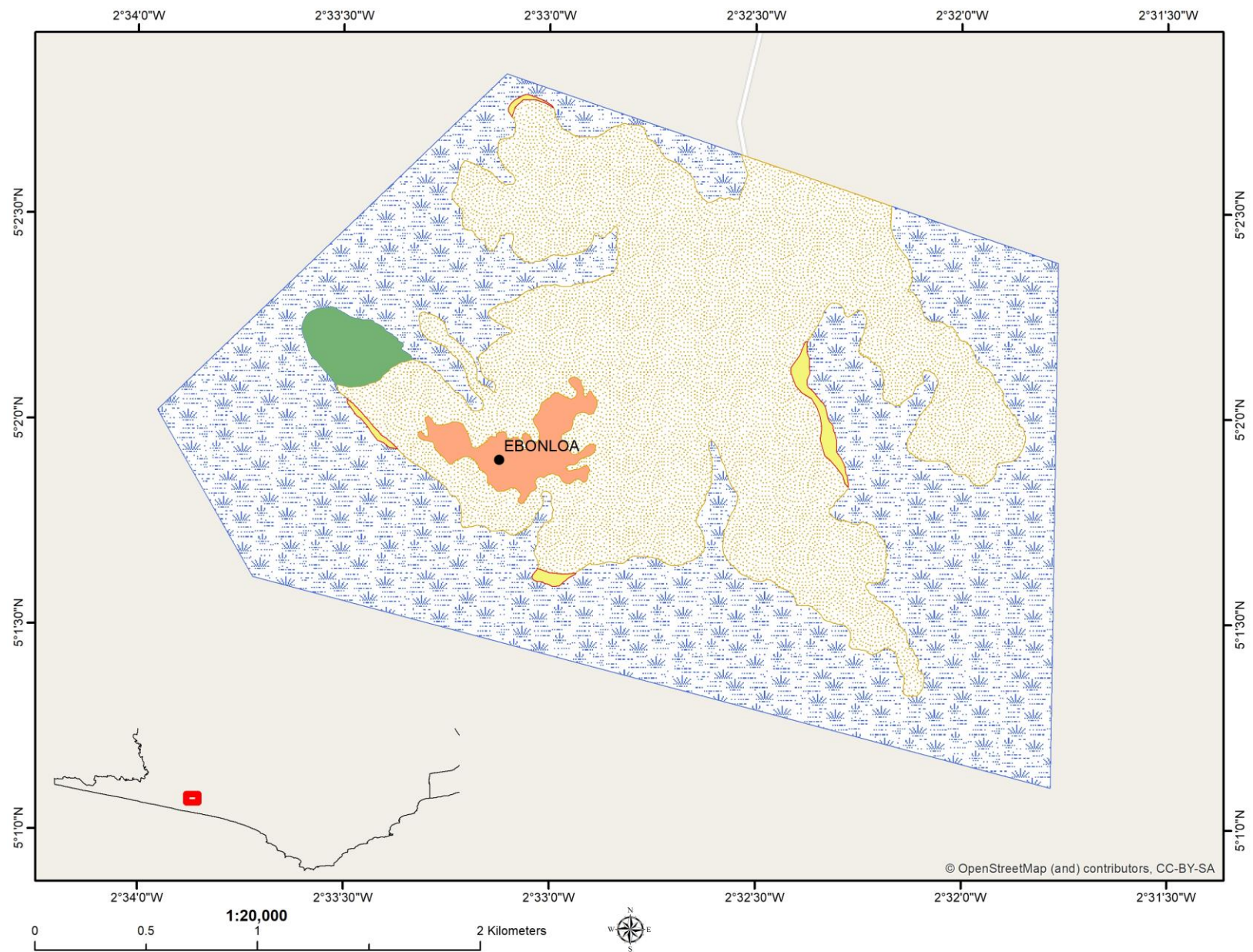
-  Mangrove
-  Degraded Mangrove Stands
-  Swamp Forest
-  Degraded Swamp Forest
-  Other Vegetation
-  Water body
-  Farms
-  Grassland
-  Builtup Area
-  Bare Area

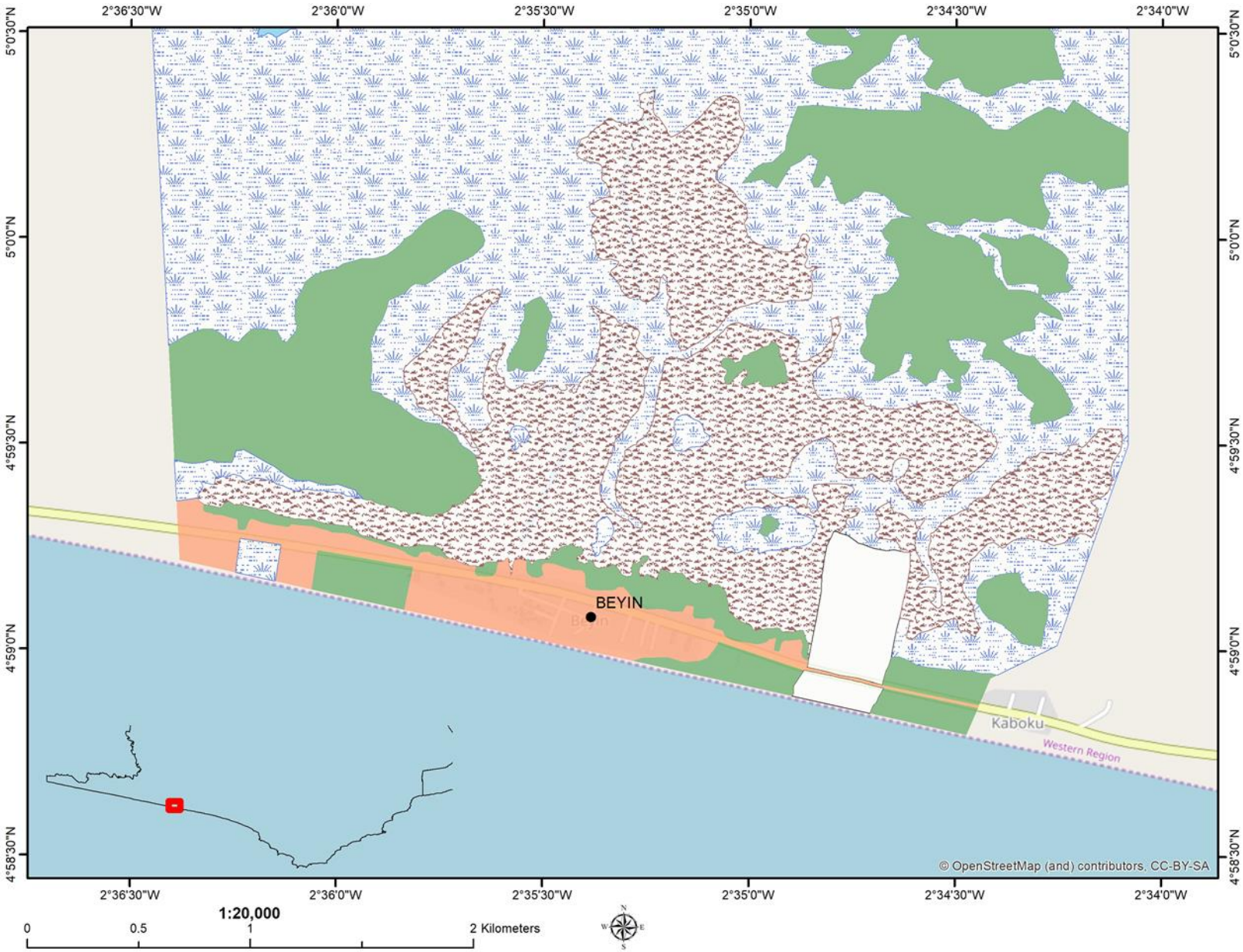




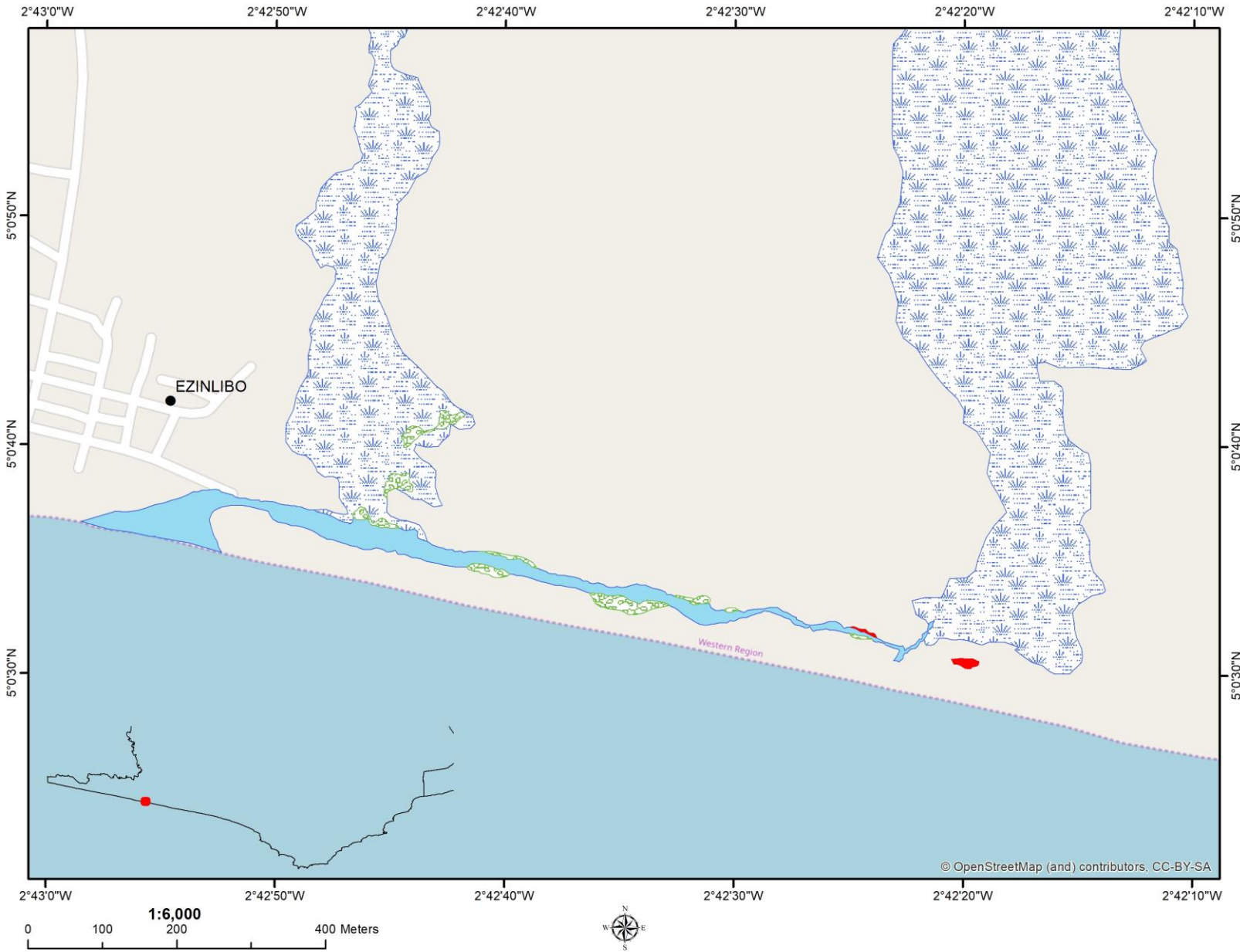


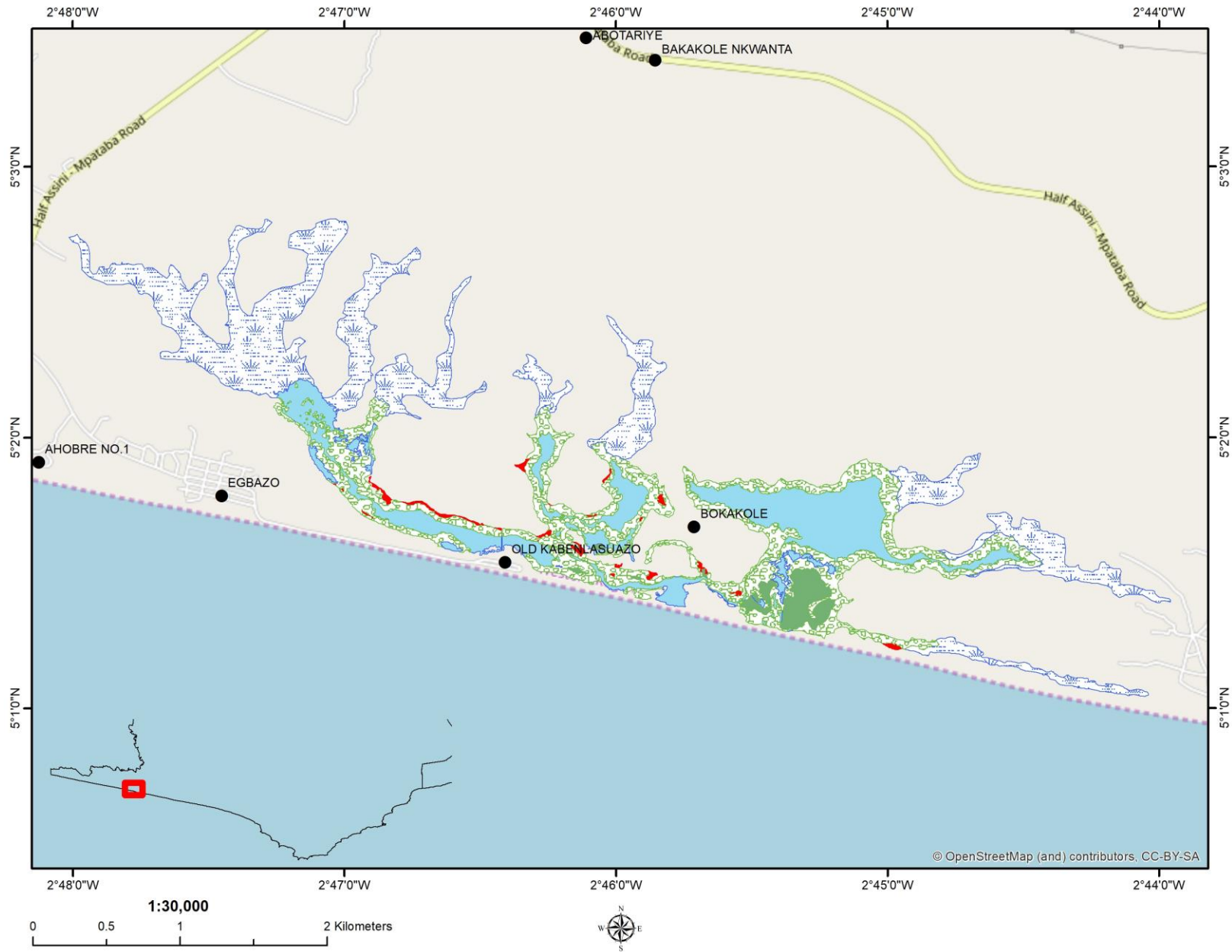






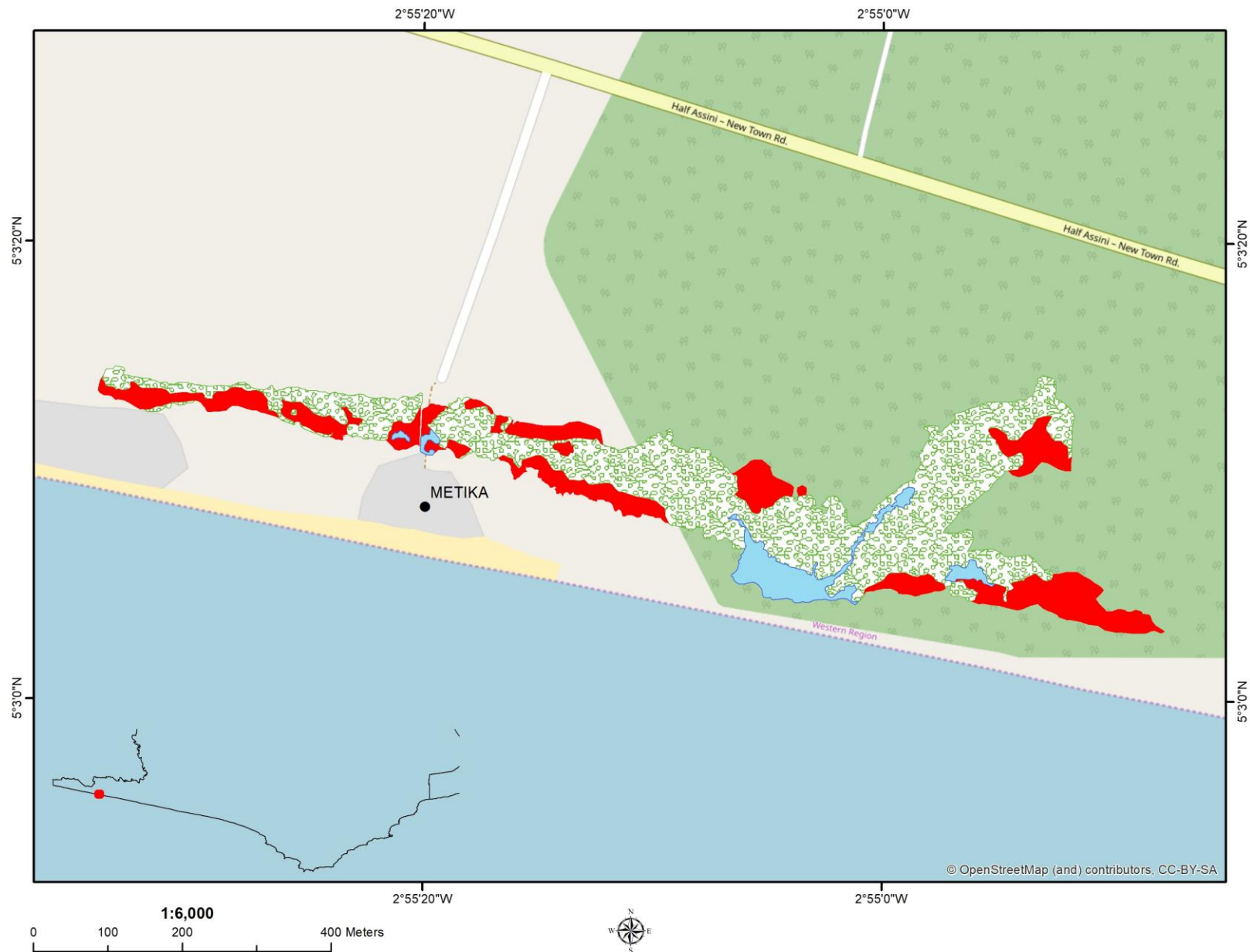
















Participatory Mapping of Wetland Resources of the Greater Amanzule Wetland Complex- Altas

DISTRICT	COMMUNITY	AREA (HECTARES)					Total area mapped
		MANGROVES	DEGRADED MANGROVES	SWAMP FOREST	DEGRADED SWAMP FOREST	MOSAIC (MANGROVE/ SWAMP)	
Jomoro	Bonyere	57.41	0.48	36.6			154.54
Jomoro	Metika	8.6	3.77				13.29
Jomoro	Mangyea	0.48	0.28	11.71			15.27
Jomoro	Egbazo	23.76	1.6	104.44			154.83
Jomoro	Old Kabenlasuazo	39.16	2.53	20.68			143.38
Jomoro	Effasu	15.36	1.31	-	-		26.38
Jomoro	Ezinlibo	0.52	0.05	119.4			123.31
Jomoro	Ekpu	4.34	1.19	16.12			36.53
Jomoro	Ebonloa	-	-	122.52	5.52		472.76
Ellebelle	Kamgbunli	34.25	1.83	6.48	9.36	6.88	82.94
Ellebelle	Alloakpoke	-	-	466.81	5.04		842.22
Ellebelle	Old Bakanta	128.01	4.19				152.34
Ellebelle	Sanzule	16.54	0.47	218.02	5.3	4.53	283.58
Ellebelle	Sanwoma	198.67	115.05	-	-	-	848.46
Ellebelle	Allabokazo	2.73		154.03	25.05		247.04
Ellebelle	Azulenloanu	89.39	9.83	17.48			141.47
Ellebelle	Anyanzini	82.84	17.8				193.05
Ellebelle	Ampain	73.05	1.67				102.48
Ellebelle	Sanwoma (East)	228.77	13.84				513.67
Nzema East	Apataim	242.27	1.3	535.72			874.9
Nzema East	Adelekazo	286.2		386.24		766.1	736.82
Ellebelle	Bobrama	7.29		20.66	0.33		203.29
Jomoro	Ellonyi	1.22	0.22	208.67			651.4
Jomoro	Half Assini	2.18					8.4
Ellebelle	Asanta	10.4					320.55
Jomoro	Benyin	-	-	602.42	-	-	1288.96
	TOTAL	1553.44	177.41	173.43	50.6	777.51	8631.86