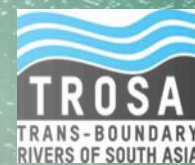


Meghna River Basin Land Use Maps (Dry Period, 2019) Basin and Sub-basins



Land use categories – based on Intergovernmental Panel on Climate Change (IPCC) classification

No.	Land use class	Definition
1	Forest	Land spanning more than 0.5 hectares with trees higher than 5 meters and canopy cover more than 10% or land dominated by natural woody vegetation of 5m or less than 5m in height and its cover exceed 40%. It includes both tree dominated and shrub dominated area of Hill Forest, Sal forest, Swamp forest, Forest plantation.
2	Cropland	This category is applicable to cultivatable and cultivated land and also to agroforestry areas which are not defined as forest by the national definition. It includes single crop, double crop and triple crop agriculture land.
3	Grassland	This category includes pastures and grazing lands. This category includes not only natural lands but also recreation areas. It includes the herb dominated areas along the rivers where water may persists for 6-7 months.
4	Wetlands	This category includes areas which are covered by water or wet areas (such as Peat bog) which is not classified as forest, cropland and grassland. It includes the Rivers and Khals or other types of water body like Baor, Perennial Beels/ Haors, and lakes where water may persists for 10-12 months.
5	Settlements	The artificial and impervious surfaces which is paved with hard materials and functionally linked with vegetated areas, open spaces, recreational parks and water bodies. It includes Rural Settlements, developing area and Urban areas.
6	Aquaculture	This class includes the geographic areas which are used for year round fresh water aquaculture. This class may include the areas where fresh water aquaculture is practiced after harvesting the rice crop
7	Plantations	This class includes the geographic areas where trees or shrubs are planted for fruits and leaf. Trees are even-aged, planted and managed in rows, and cover a large area. It includes the Fruit garden and Tea garden areas
8	Mining	Extraction or Mining sites are defined by the absence of the original land use which is removed by human activity or machinery for extraction of sand, stone or minerals.
9	Other lands	This category includes bare lands, rocks and unmanaged areas which are not covered by any of the mentioned land use classes like forest, cropland, grassland, wetlands and settlements. It includes the Sand, Artificial Surface and Brickfield of the study area.

Major land use types (2019, Dry period)



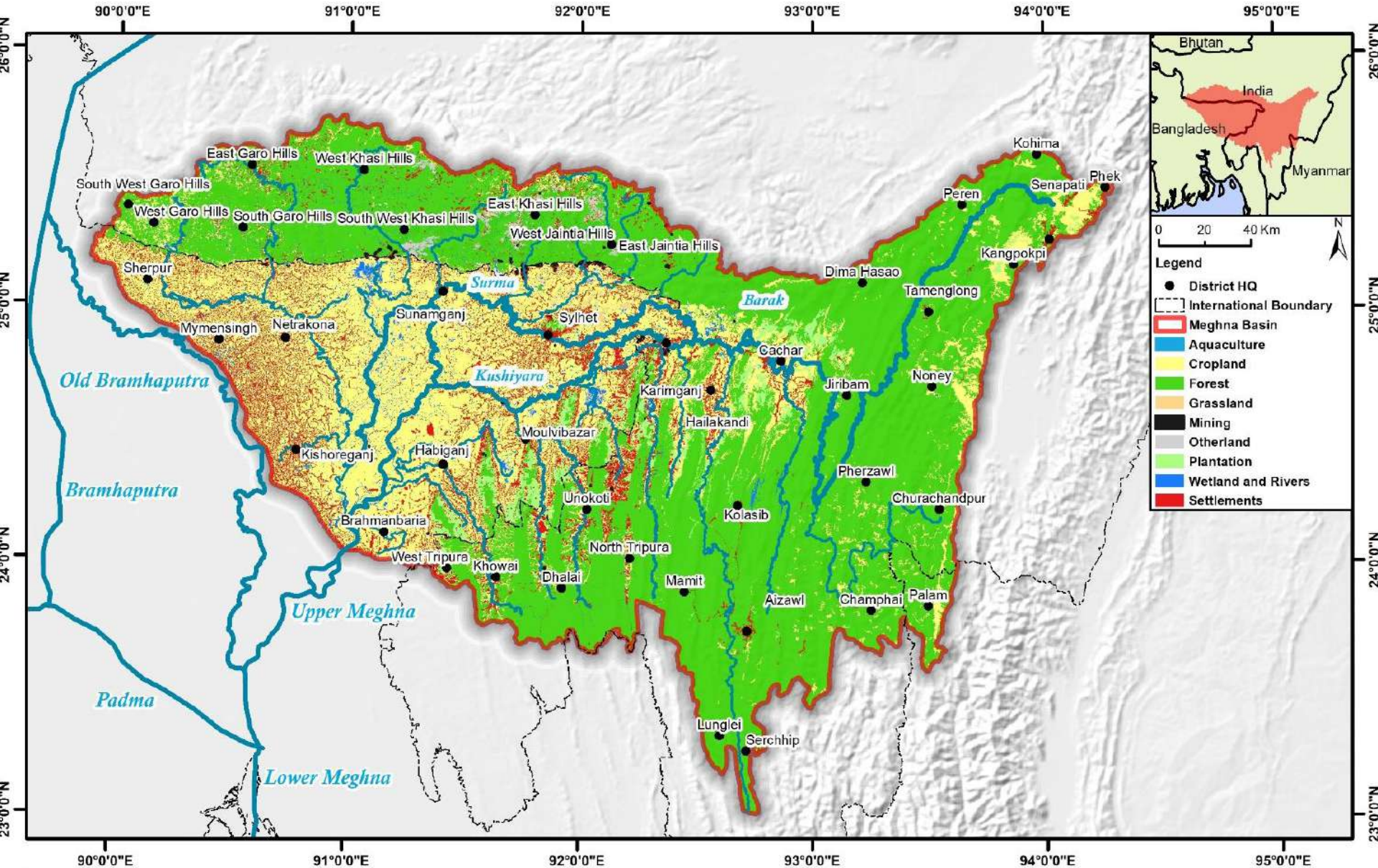
India (app 43100 sq km)

- Forests is most dominant land use type (82% of total area)
- Cropland (10%) and Settlements (3%)
- Aquaculture and Mining (less than 0.02%)

Bangladesh (app 21000 sq km)

- Cropland (66% of total area)
- Settlements (15% of total area)
- Forest land (app 3%)
- Aquaculture and Mining (less than 1%)





Supported By:



MEGHNA BASIN LULC 2019

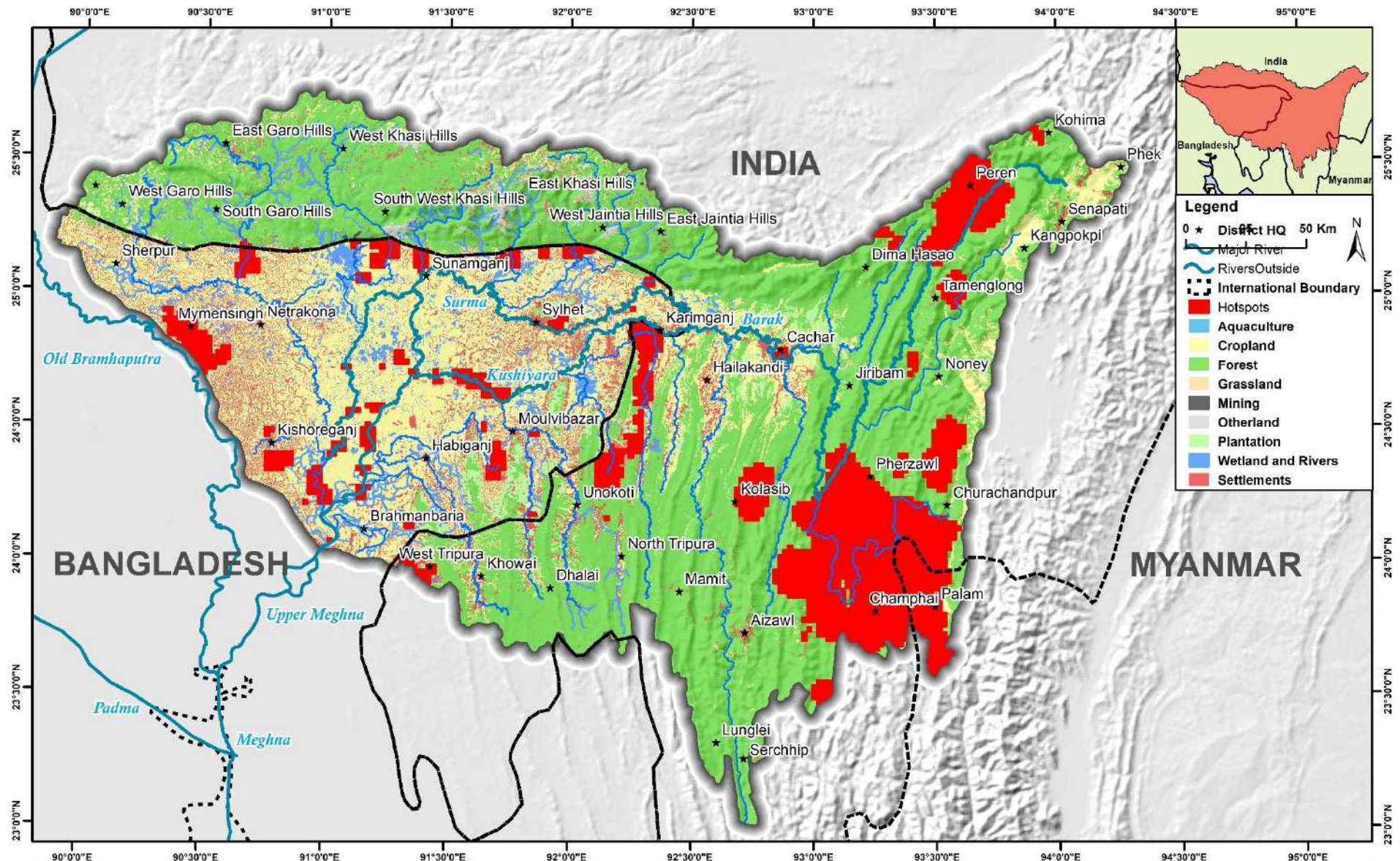
Datum: WGS 84, Projection: UTM Zone 46 North
Map Date: December, 2021
Not all feature drawn to scale

Data Sources:

LULC and data analysis :
NEHU (Shillong) & CEGIS (Dhaka)
Elevation: GMTED2010
Watershed: HydroSHEDs
Major Locations: OSM

Geographical boundaries and designations do not imply any opinion whatsoever on the part of IUCN as to the legal status of the country/ territory or the delimitation of its frontier and boundaries.

Map developed by IORA (New Delhi)



Supported By:



MEGHAN BASIN

Hotspots of Land Use 2005 - 2019

Datum: WGS 84, Projection: UTM Zone 46 North

Map Date: December, 2021

Not all feature drawn to scale

Data Sources:

LULC and data analysis : NEHU (Shillong) & CEGIS (Dhaka)

Elevation: GMTED2010

Watershed: HydroSHEDs

Major Locations: OSM

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Meghna sub-basins

Total Number of Sub-basins - 21

Fourteen transboundary sub-basins

(shared by Bangladesh and India) –

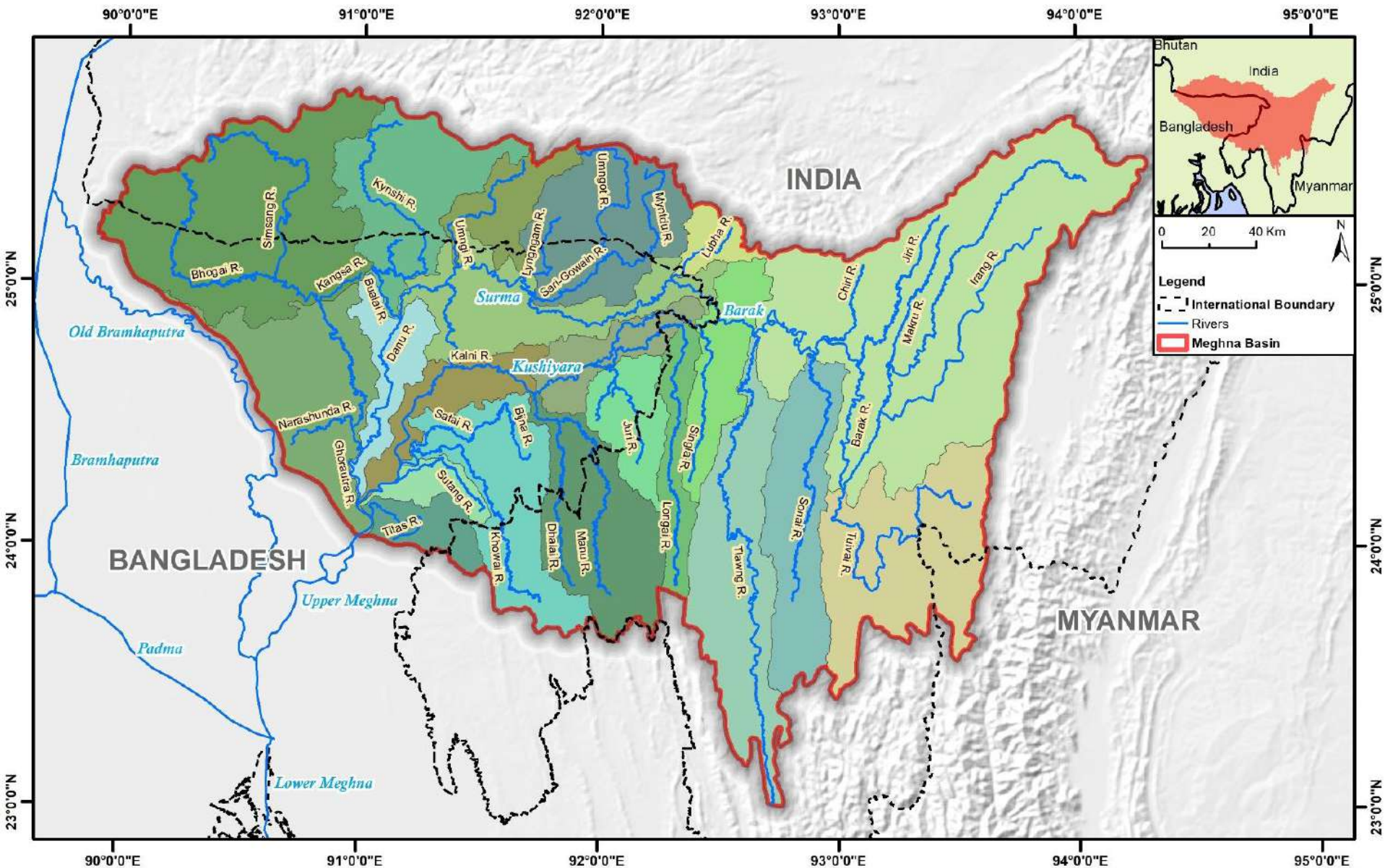
1) Simsang-Kangsa; 2) Kynshi-Bualai; 3) Umngi; 4) Myntdu-Sari Gowain; 5) Lubha; 6) Singla-Barak; 7) Longai; 8) Juri; 9) Surma; 10) Kushiya; 11) Manu-Dhalai; 12) Khowai; 13) Sutang; 14) Titas

Four sub-basins fully in India –

1) Barak; 2) Tuivai 3) Sonai; and 4) Tlawng

Three sub-basins fully in Bangladesh -

1) Ghoratra-Narashunda; 2) Danu and 3) Kalni.



MEGHNA BASIN RIVERS & SUB-BASIN

Datum: WGS 84, Projection: UTM Zone 46 North
 Map Date: December, 2021
 Not all feature drawn to scale

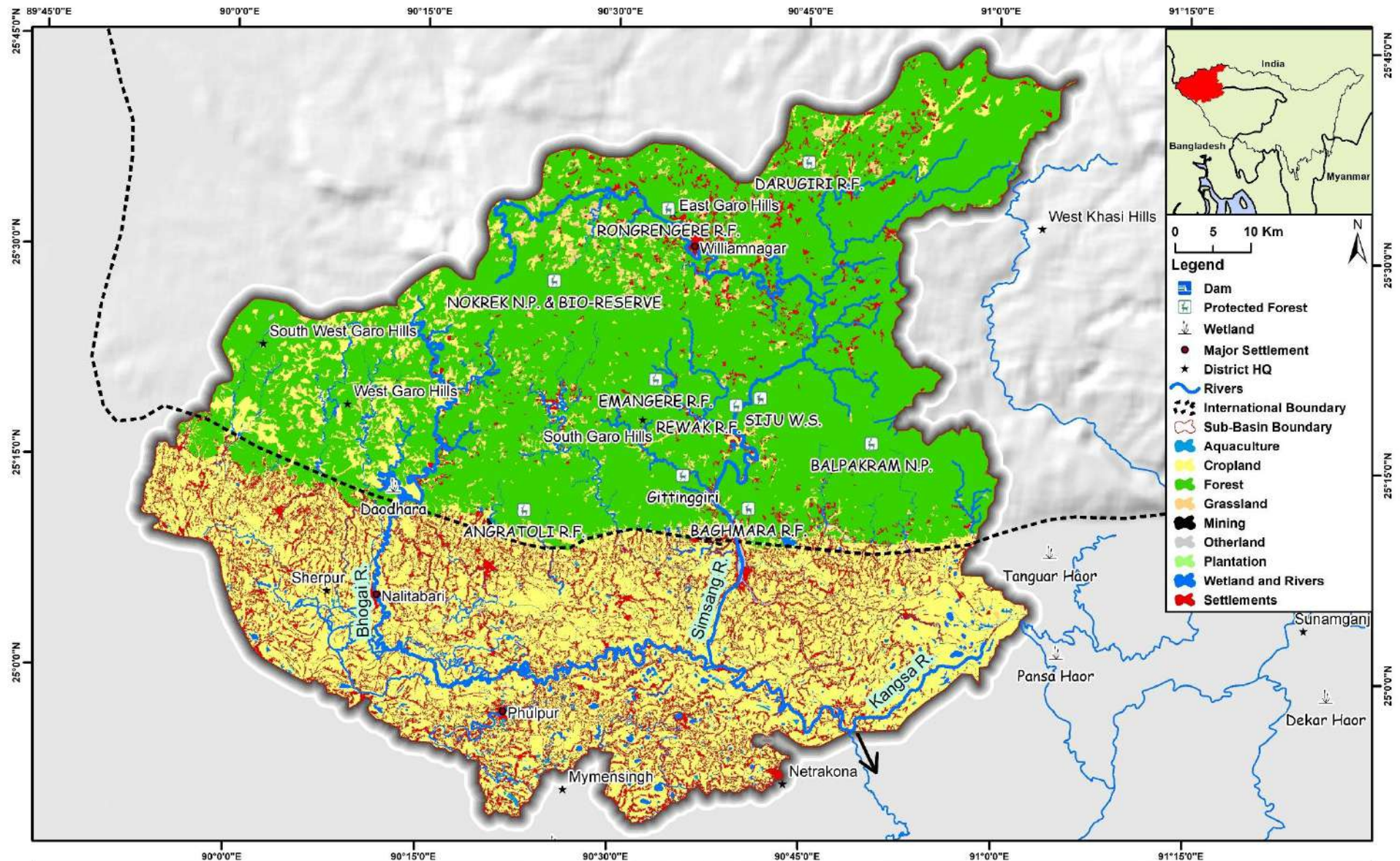
Data Sources:
 LU/LC and data analysis :
 NEHU (Shillong) & CEGIS (Dhaka)
 Elevation: GMTED2010
 Watershed: HydroSHEDS
 Major Locations: OSM

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2019 Land Use Maps
14 Sub-basins Shared by India and Bangladesh



Supported By:



SIMSANG-KANGSA SUB-BASIN

LULC 2019

Datum: WGS 84, Projection: UTM Zone 46 North

Map Date: December, 2021

Not all feature drawn to scale

Data Sources:

LULC and data analysis : NEHU (Shillong) & CEGIS (Dhaka)

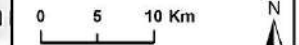
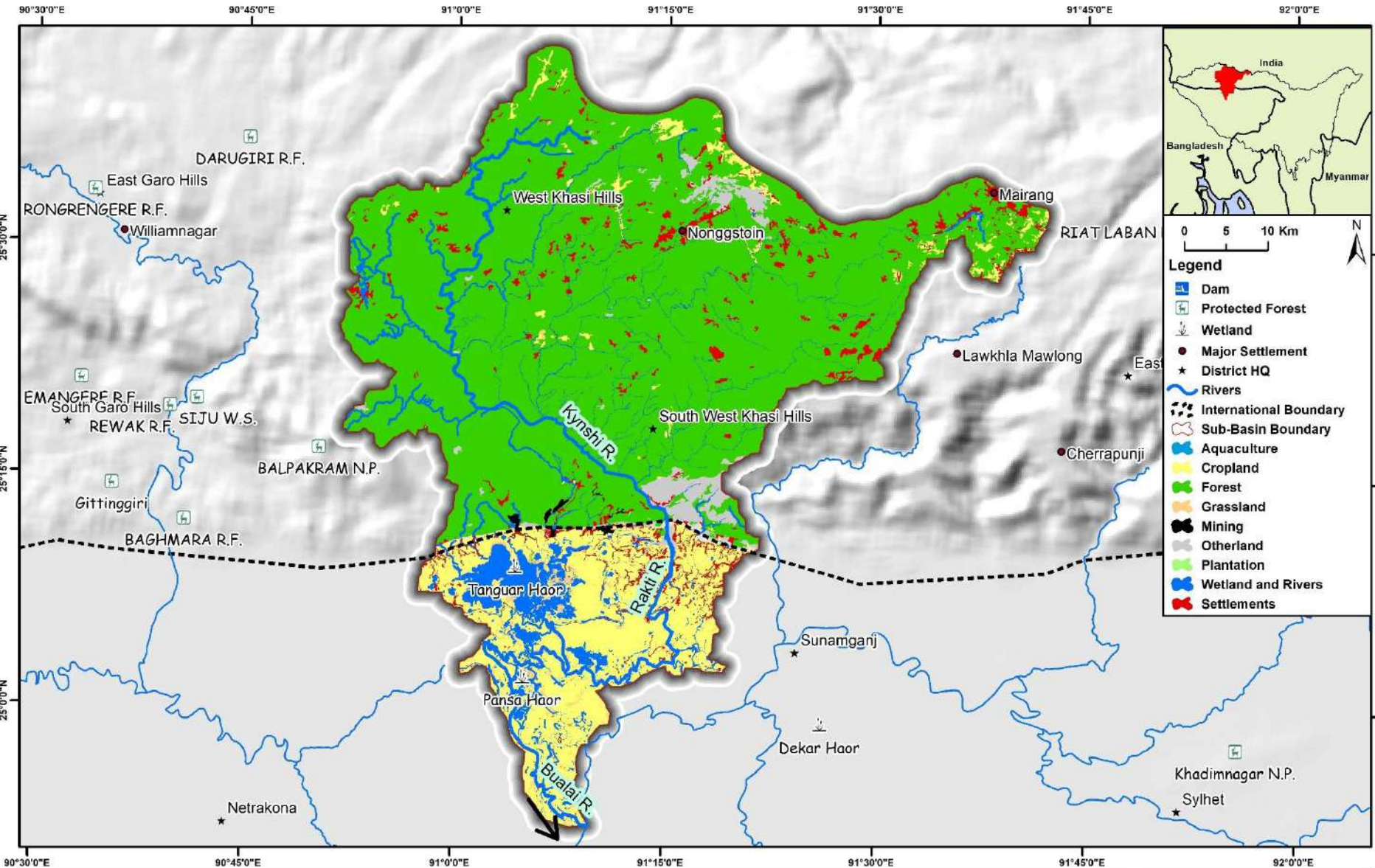
Elevation: GMTED2010

Watershed: HydroSHEDs

Major Locations: OSM

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Map developed by IORA (New Delhi)



- Legend**
- Dam
 - Protected Forest
 - Wetland
 - Major Settlement
 - District HQ
 - Rivers
 - International Boundary
 - Sub-Basin Boundary
 - Aquaculture
 - Cropland
 - Forest
 - Grassland
 - Mining
 - Otherland
 - Plantation
 - Wetland and Rivers
 - Settlements

Supported By:



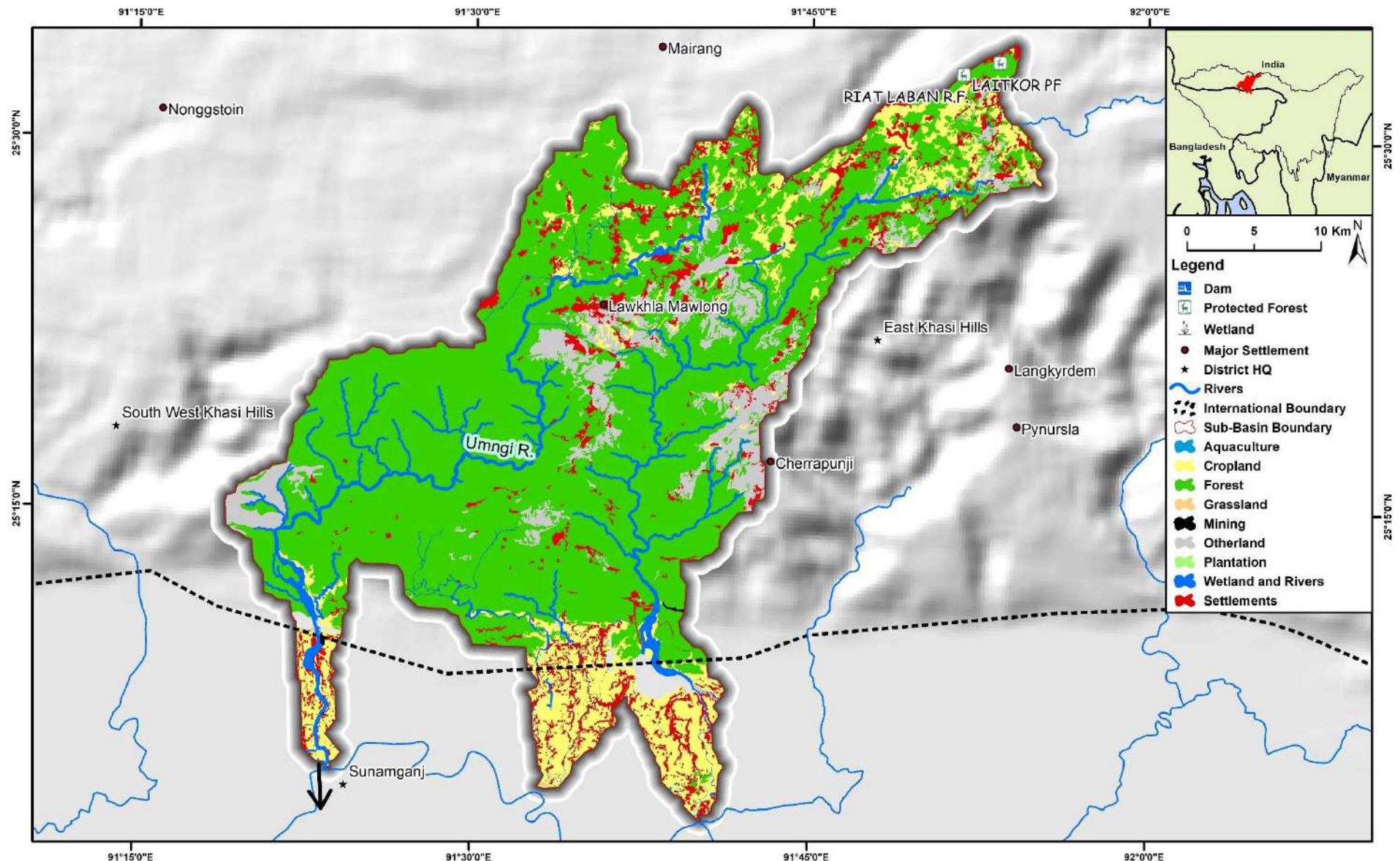
KYNSHI-BUALAI SUB-BASIN LULC 2019

Datum: WGS 84, Projection: UTM Zone 46 North
 Map Date: December, 2021
 Not all feature drawn to scale

Data Sources:
 LULC and data analysis :
 NEHU (Shillong) & CEGIS (Dhaka)
 Elevation: GMTED2010
 Watershed: HydroSHEDs
 Major Locations: OSM

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Map developed by IORA (New Delhi)



Supported By:



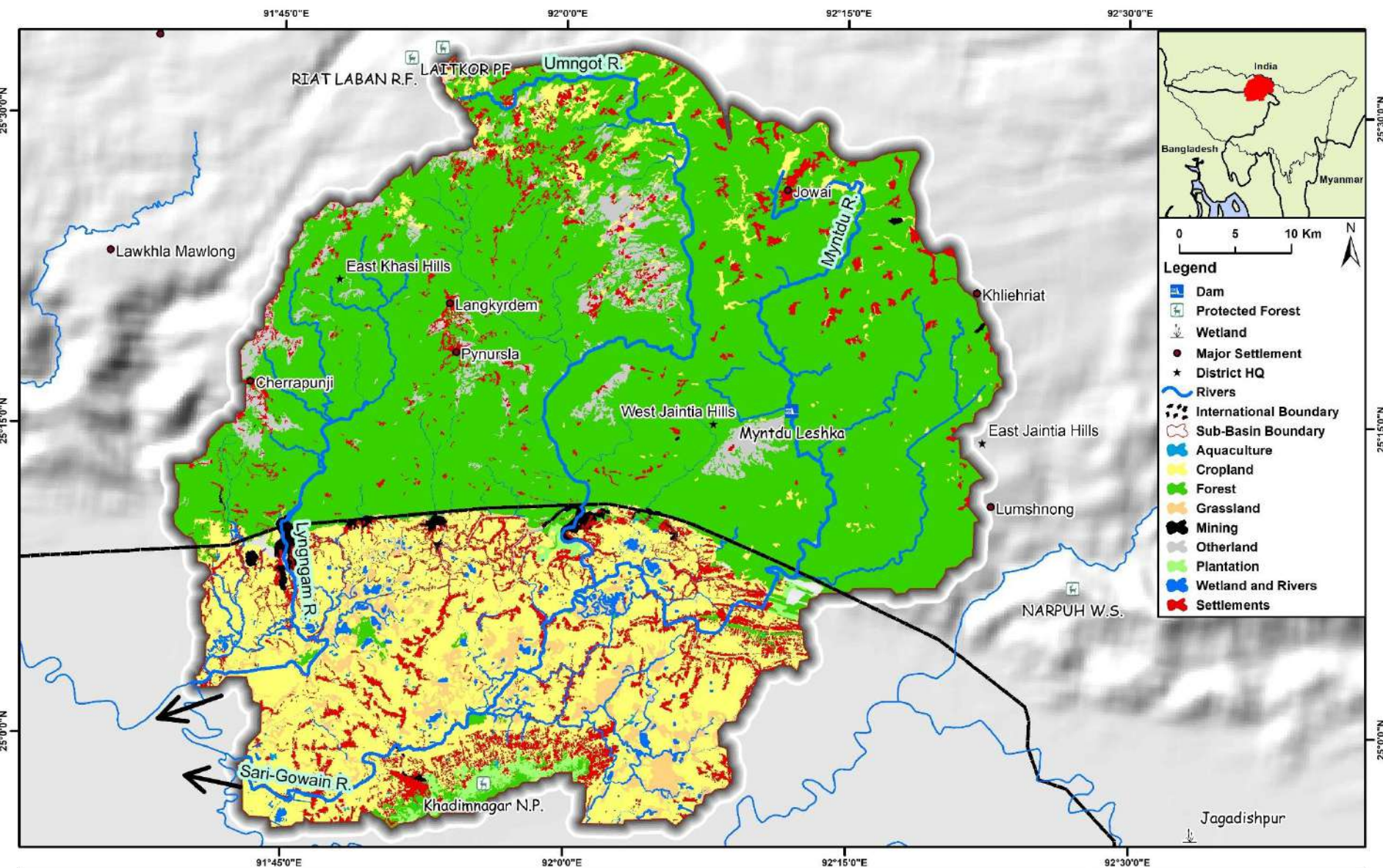
UMNGI SUB-BASIN LULC 2019

Datum: WGS 84, Projection: UTM Zone 46 North
Map Date: December, 2021
Not all feature drawn to scale

Data Sources:
LULC and data analysis :
NEHU (Shillong) & CEGIS (Dhaka)
Elevation: GMTED2010
Watershed: HydroSHEDs
Major Locations: OSM

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Map developed by IORA (New Delhi)



Supported By:



MYNTDU-SARI GOWAIN SUB-BASIN LULC 2019

Datum: WGS 84, Projection: UTM Zone 46 North
Map Date: December, 2021
Not all feature drawn to scale

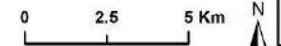
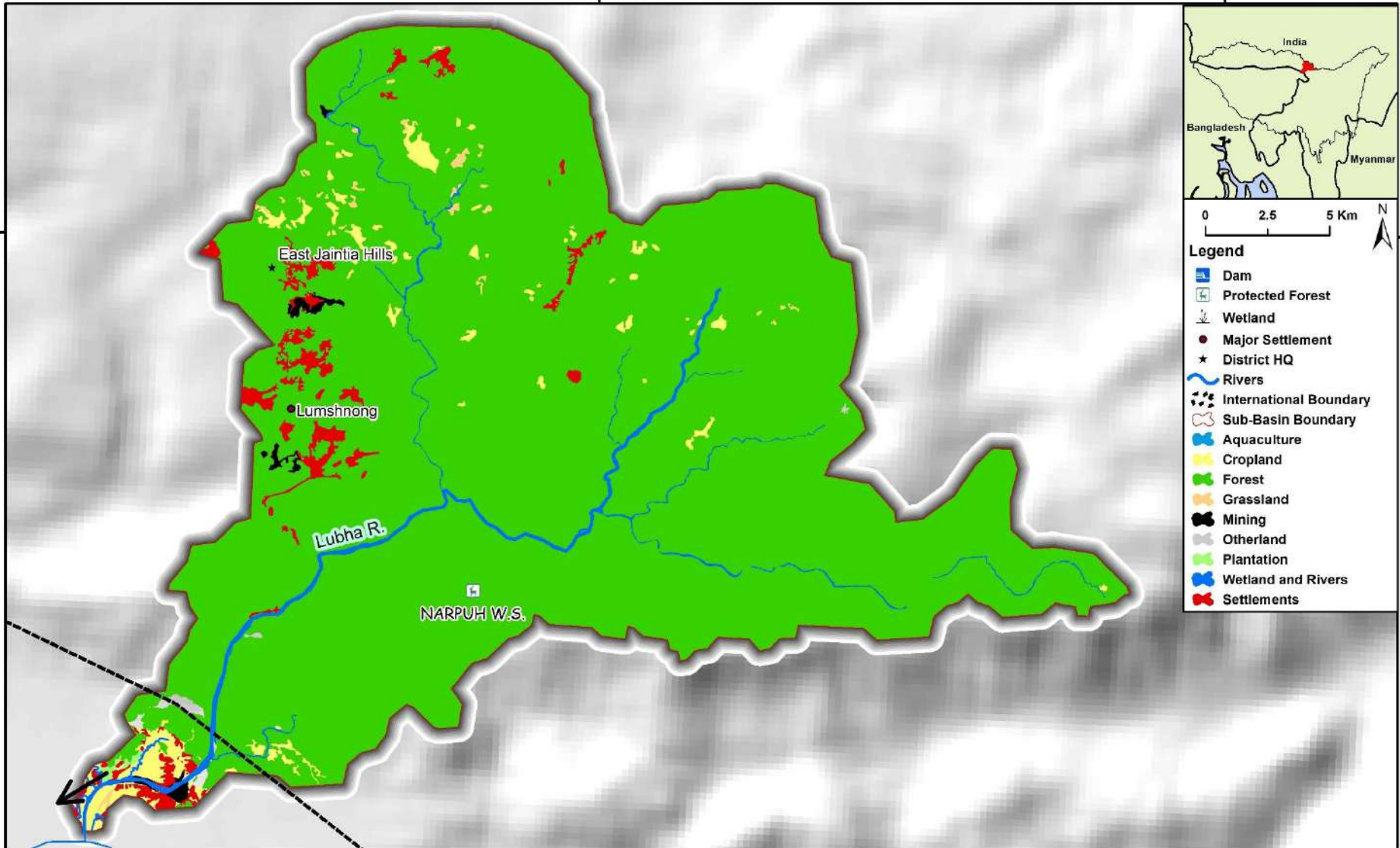
Data Sources:
LULC and data analysis :
NEHU (Shillong) & CEGIS (Dhaka)
Elevation: GMTED2010
Watershed: HydroSHEDs
Major Locations: OSM

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Map developed by IORA (New Delhi)

92°30'0"E

92°45'0"E



92°30'0"E

92°45'0"E

Supported By:



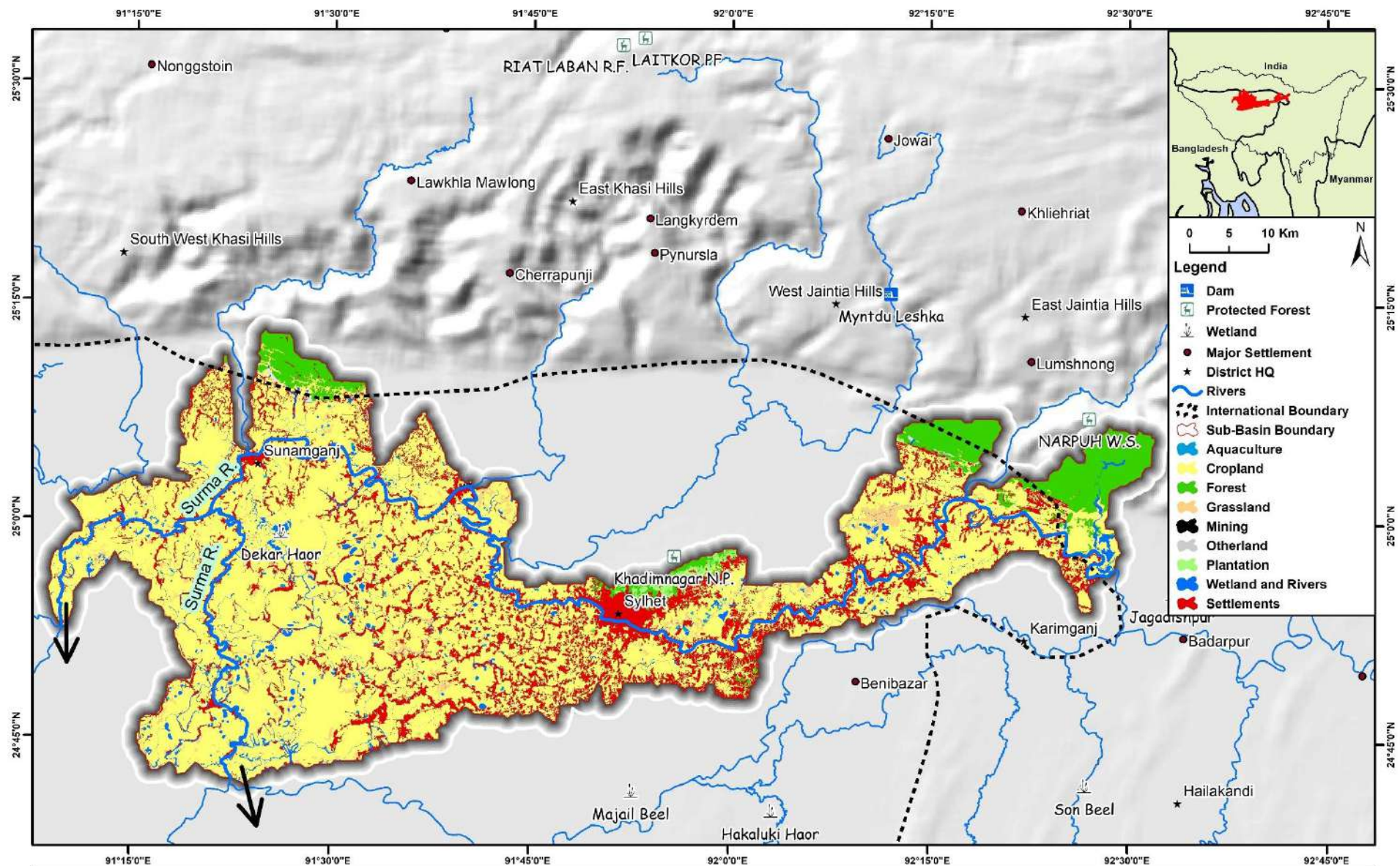
LUBHA SUB-BASIN LULC 2019

Datum: WGS 84, Projection: UTM Zone 46 North
 Map Date: December, 2021
 Not all feature drawn to scale

Data Sources:
 LULC and data analysis :
 NEHU (Shillong) & CEGIS (Dhaka)
 Elevation: GMTED2010
 Watershed: HydroSHEDs
 Major Locations: OSM

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Map developed by IORA (New Delhi)



Supported By:



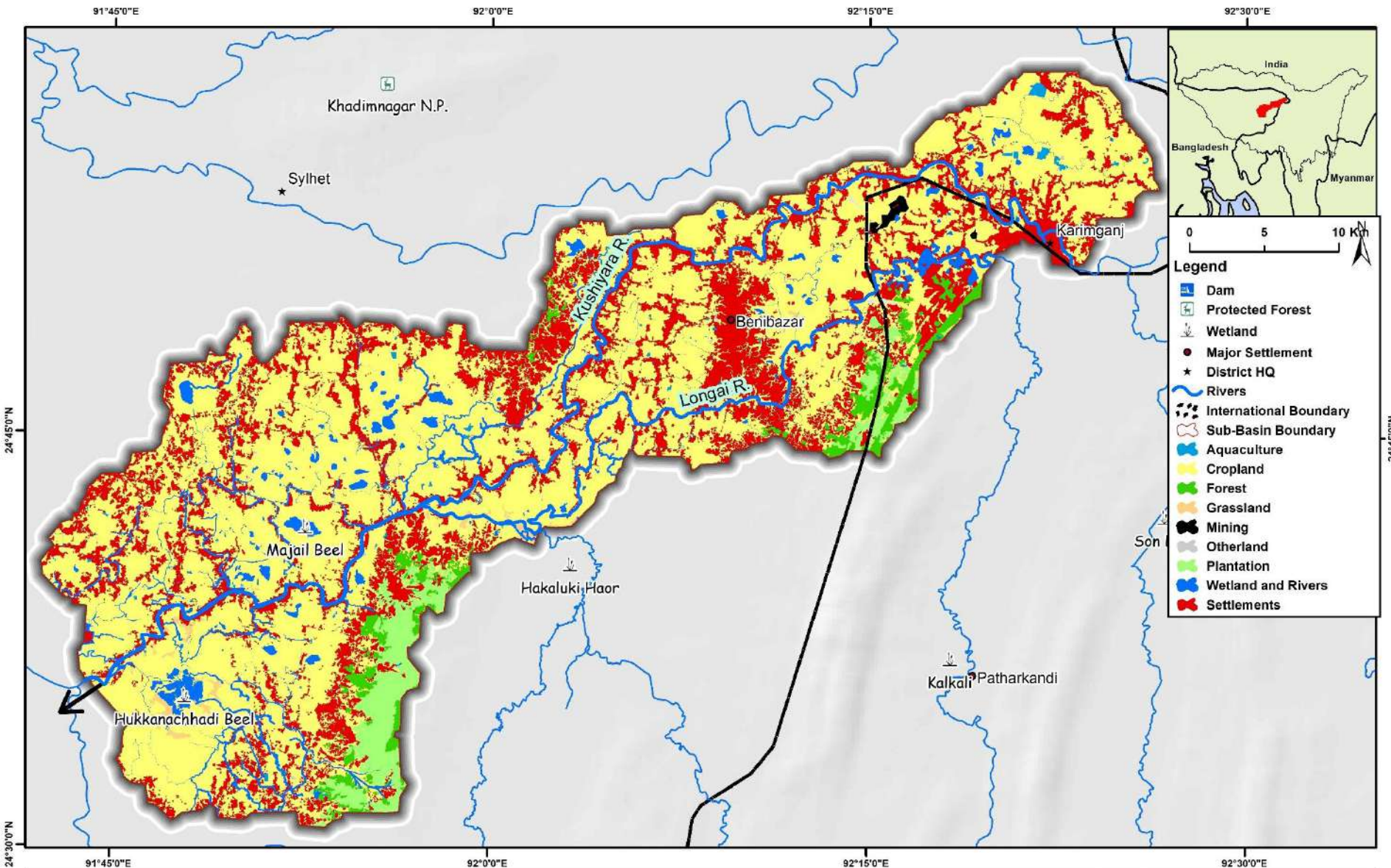
SURMA SUB-BASIN LULC 2019

Datum: WGS 84, Projection: UTM Zone 46 North
Map Date: December, 2021
Not all feature drawn to scale

Data Sources:
LULC and data analysis :
NEHU (Shillong) & CEGIS (Dhaka)
Elevation: GMTED2010
Watershed: HydroSHEDs
Major Locations: OSM

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Supported By:



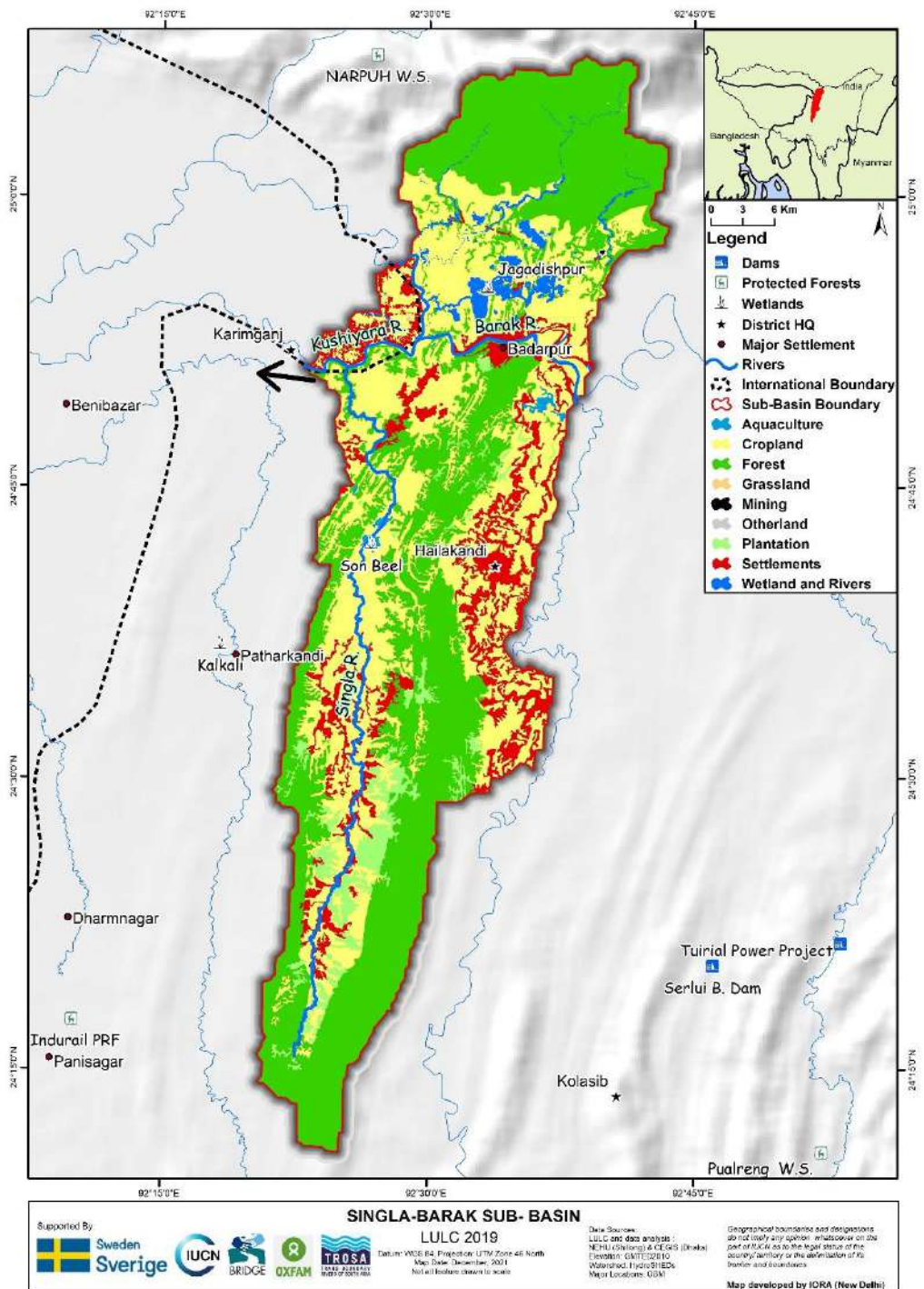
KUSHIYARA SUB-BASIN LULC 2019

Datum: WGS 84, Projection: UTM Zone 46 North
Map Date: December, 2021
Not all feature drawn to scale

Data Sources:
LULC and data analysis :
NEHU (Shillong) & CEGIS (Dhaka)
Elevation: GMTED2010
Watershed: HydroSHEDS
Major Locations: OSM

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Map developed by IORA (New Delhi)



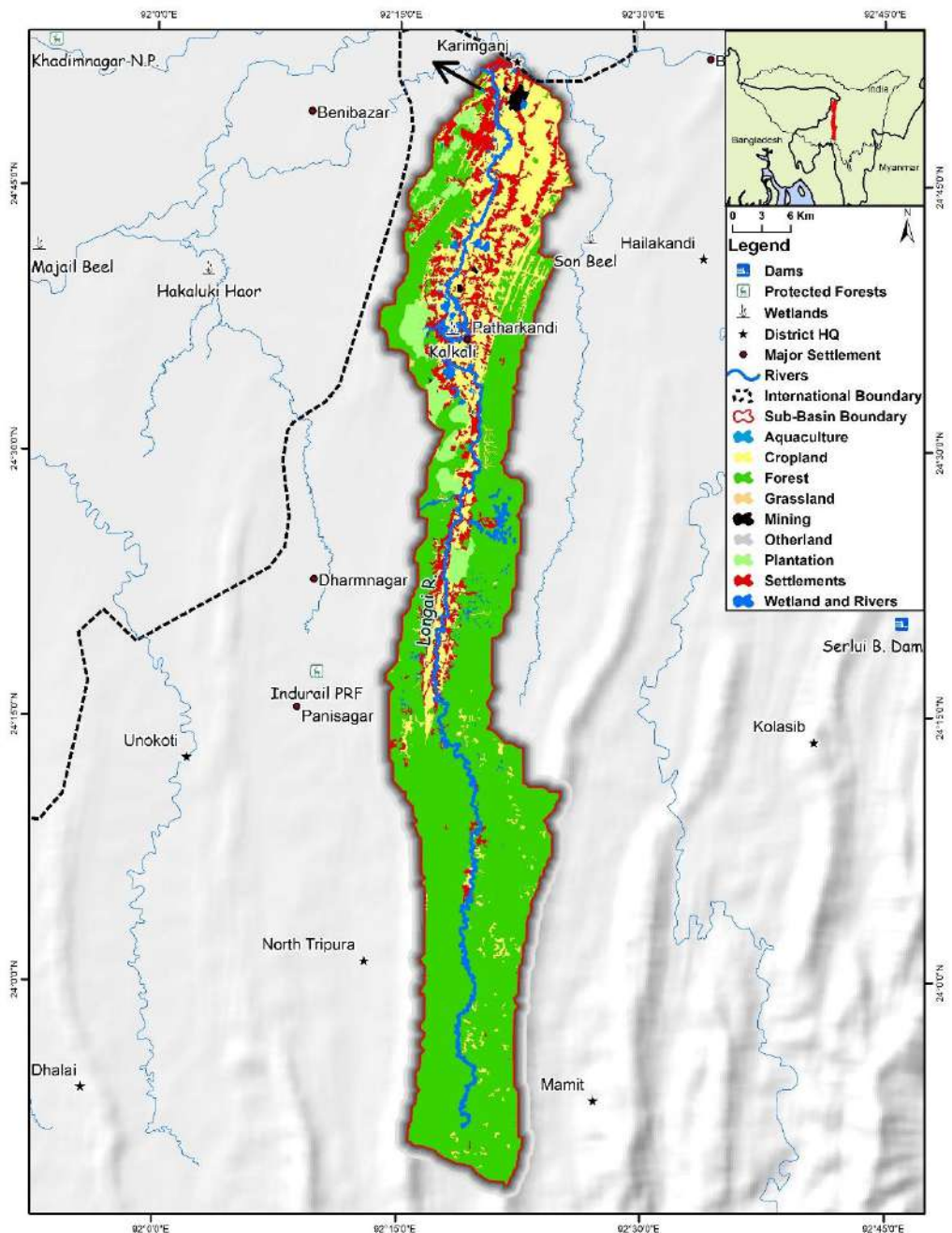
SINGLA-BARAK SUB-BASIN
LULC 2019

Supported By:

Data Sources: LULC and dam analysis: NEHU (Shillong) & IIT Guwahati (Dispur); Elevation: SRTM30 PLUS; Watershed: HydroSHEDs; River Locations: OSM

Geographical boundaries and designations do not imply any agency whatsoever on the part of ICRA as to the legal status of the country, territory or the determination of its border and boundaries.

Map developed by ICRA (New Delhi)



Supported By

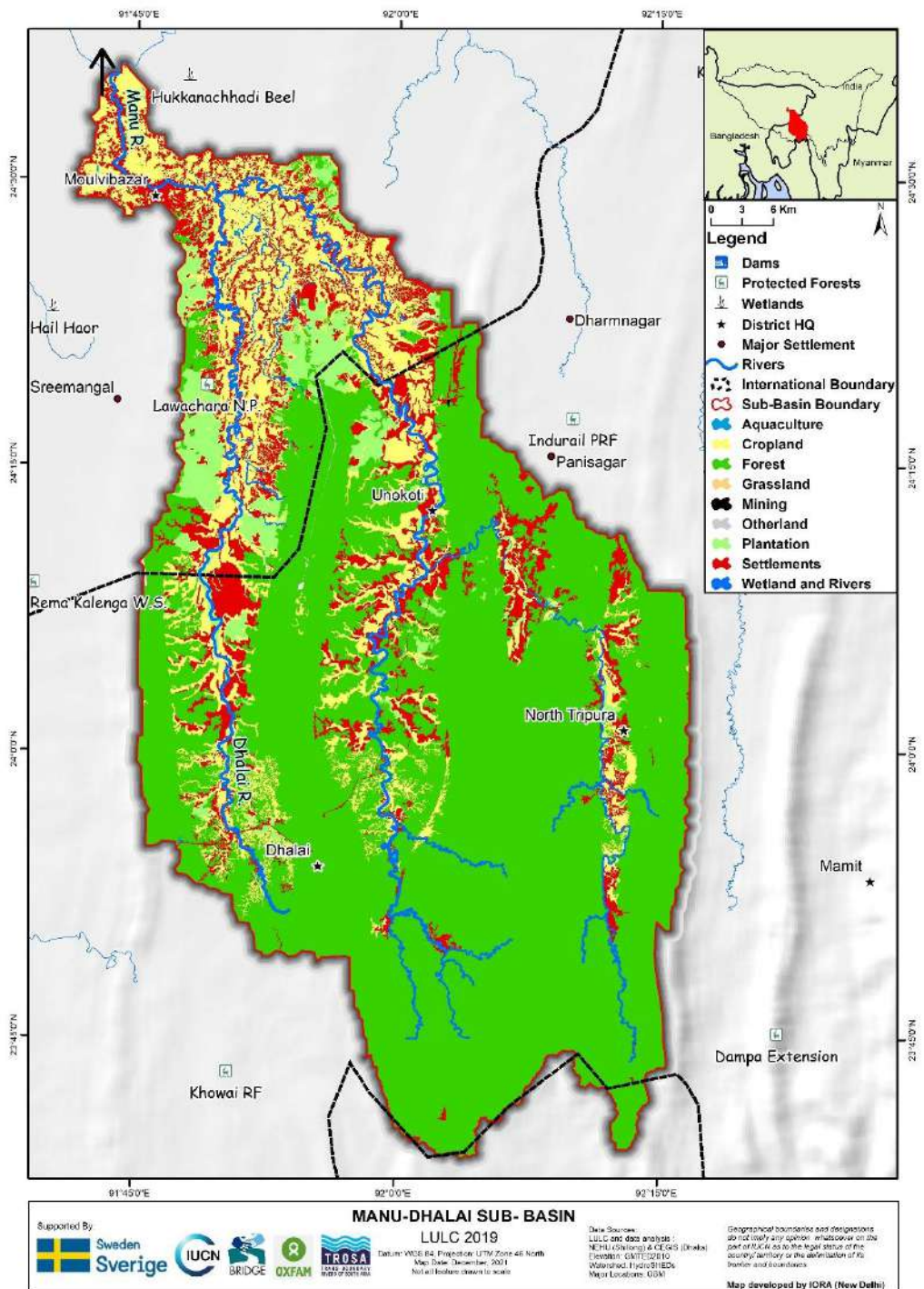
LONGAI SUB-BASIN
LULC 2019

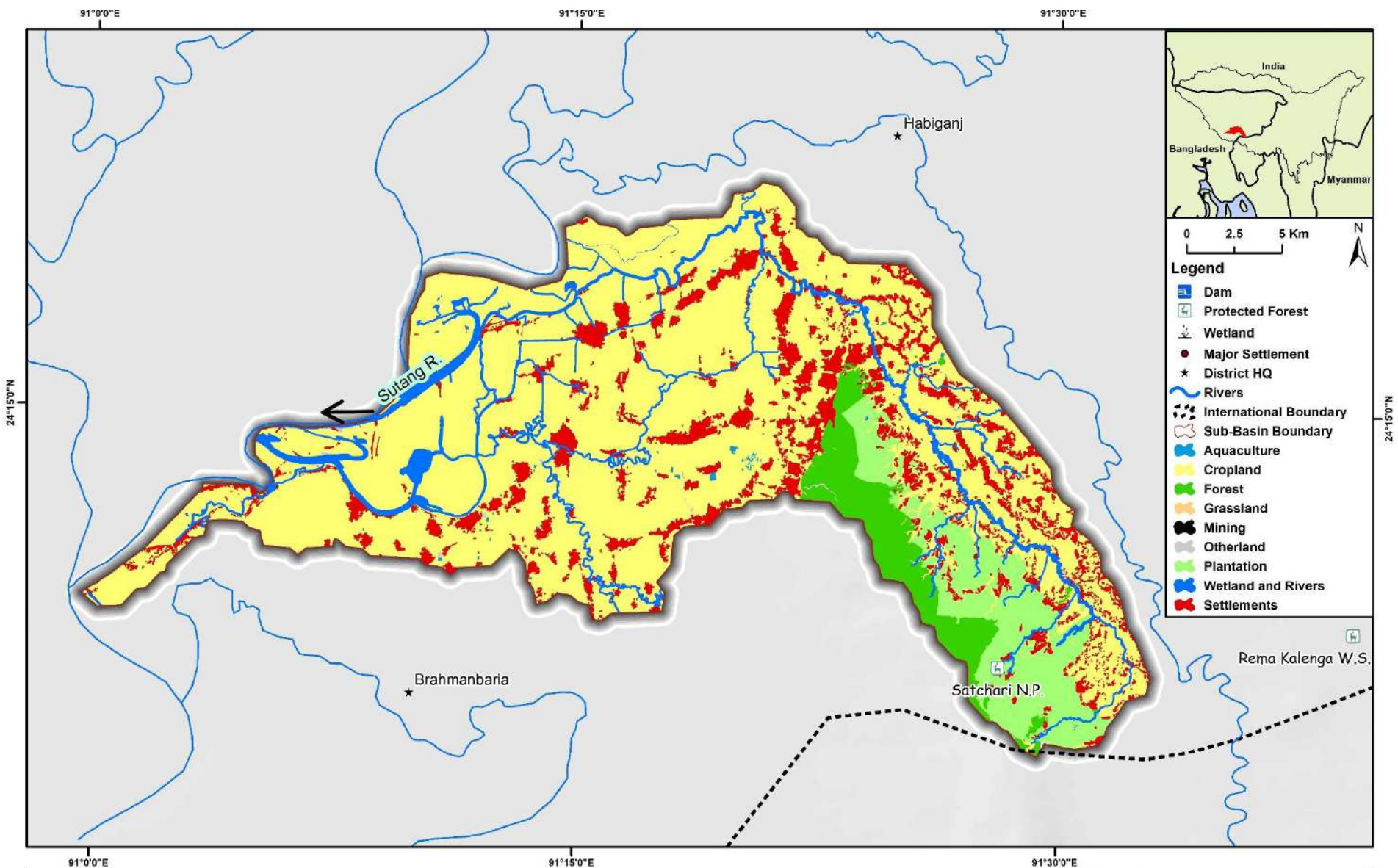
Datum: WGS 84 Projection: UTM Zone 48 North
Map Date: December, 2021
Not all features shown to scale

Data Sources:
LULC and dam analysis: NITRR (GSI/ISRO) & ITC GIS (Dhaka)
Elevation: SRTM30 PLUS
Waterbody: HydroSHEDS
Major Locations: OSM

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Map developed by ICRA (New Delhi)





Supported By:



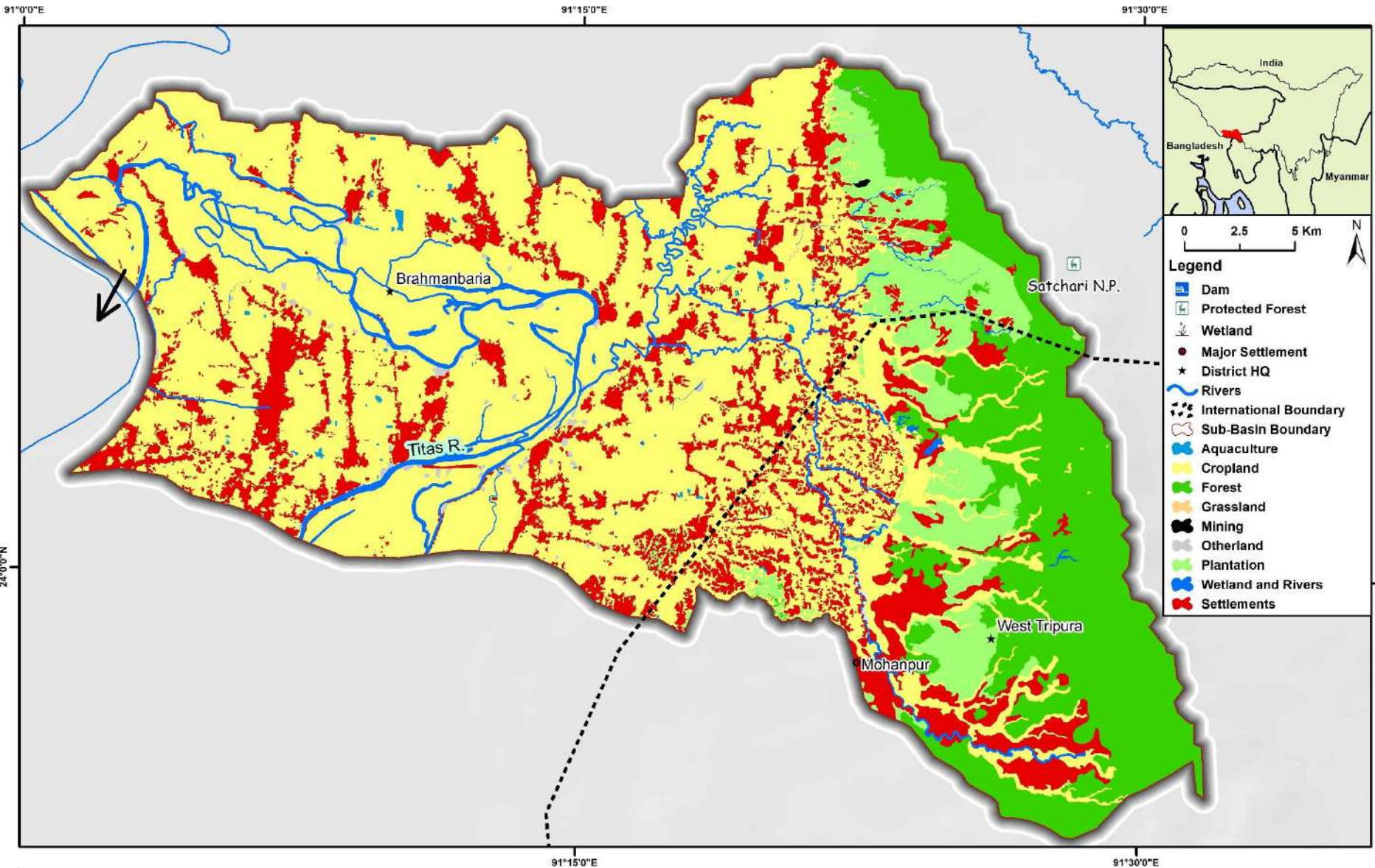
SUTANG SUB-BASIN LULC 2019

Datum: WGS 84, Projection: UTM Zone 46 North
Map Date: December, 2021
Not all feature drawn to scale

Data Sources:
LULC and data analysis :
NEHU (Shillong) & CEGIS (Dhaka)
Elevation: GMTED2010
Watershed: HydroSHEDs
Major Locations: OSM

Geographical boundaries and designations do not imply any opinion whatsoever on the part of IUCN as to the legal status of the country/ territory or the delimitation of its frontier and boundaries.

Map developed by IORA (New Delhi)



Supported By:



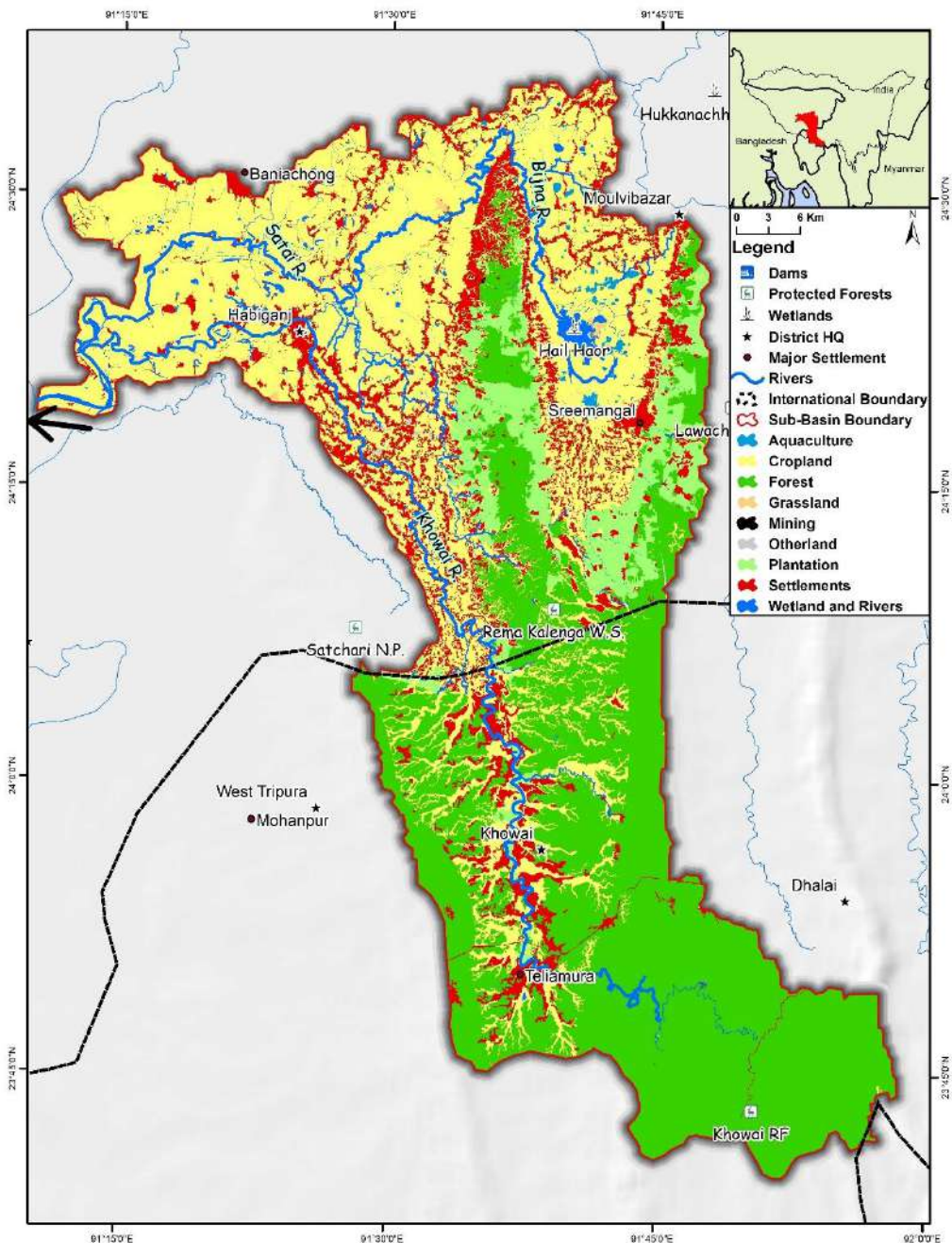
TITAS SUB-BASIN LULC 2019

Datum: WGS 84, Projection: UTM Zone 46 North
Map Date: December, 2021
Not all feature drawn to scale

Data Sources:
LULC and data analysis :
NEHU (Shillong) & CEGIS (Dhaka)
Elevation: GMTED2010
Watershed: HydroSHEDs
Major Locations: OSM

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- Legend**
- Dams
 - Protected Forests
 - Wetlands
 - District HQ
 - Major Settlement
 - Rivers
 - International Boundary
 - Sub-Basin Boundary
 - Aquaculture
 - Cropland
 - Forest
 - Grassland
 - Mining
 - Otherland
 - Plantation
 - Settlements
 - Wetland and Rivers

Supported By

KHOWAI SUB-BASIN
LULC 2019

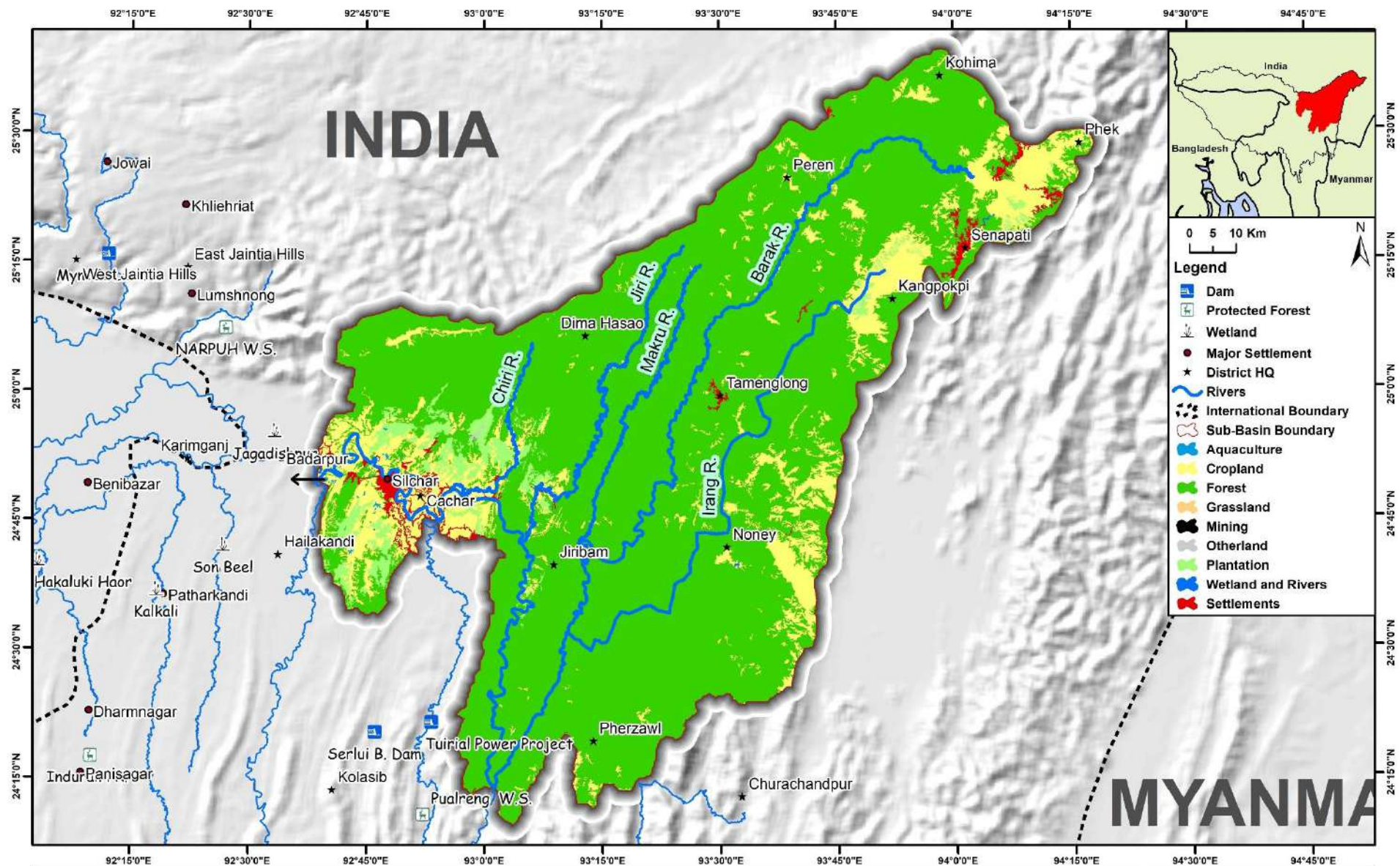
Data Sources:
 LULC and data analysis: NEHU (Shillong) & IIT Guwahati (Dispur)
 Elevation: SRTM30 PLUS
 Watershed: HydroSHEDS
 Major Locations: OSM

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2019 Land Use Maps – Meghna Sub-basins (fully in India)



INDIA

MYANMA

0 5 10 Km

Legend

- Dam
- Protected Forest
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- Mining
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- Plantation
- Wetland and Rivers
- Settlements

Supported By:



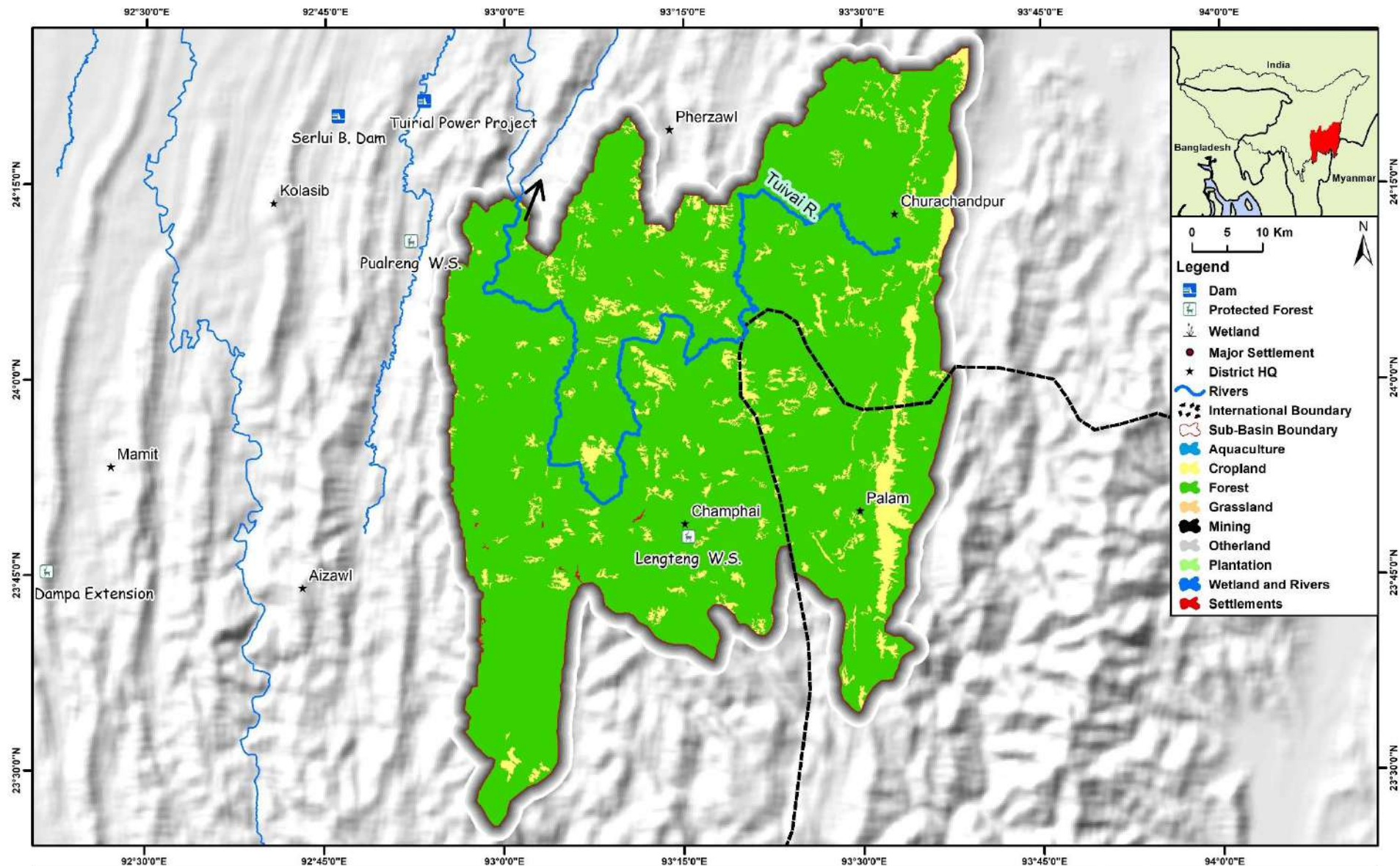
BARAK SUB-BASIN
LULC 2019

Datum: WGS 84, Projection: UTM Zone 46 North
Map Date: December, 2021
Not all feature drawn to scale

Data Sources:
LULC and data analysis :
NEHU (Shillong) & CEGIS (Dhaka)
Elevation: GMTED2010
Watershed: HydroSHEDs
Major Locations: OSM

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Map developed by IORA (New Delhi)



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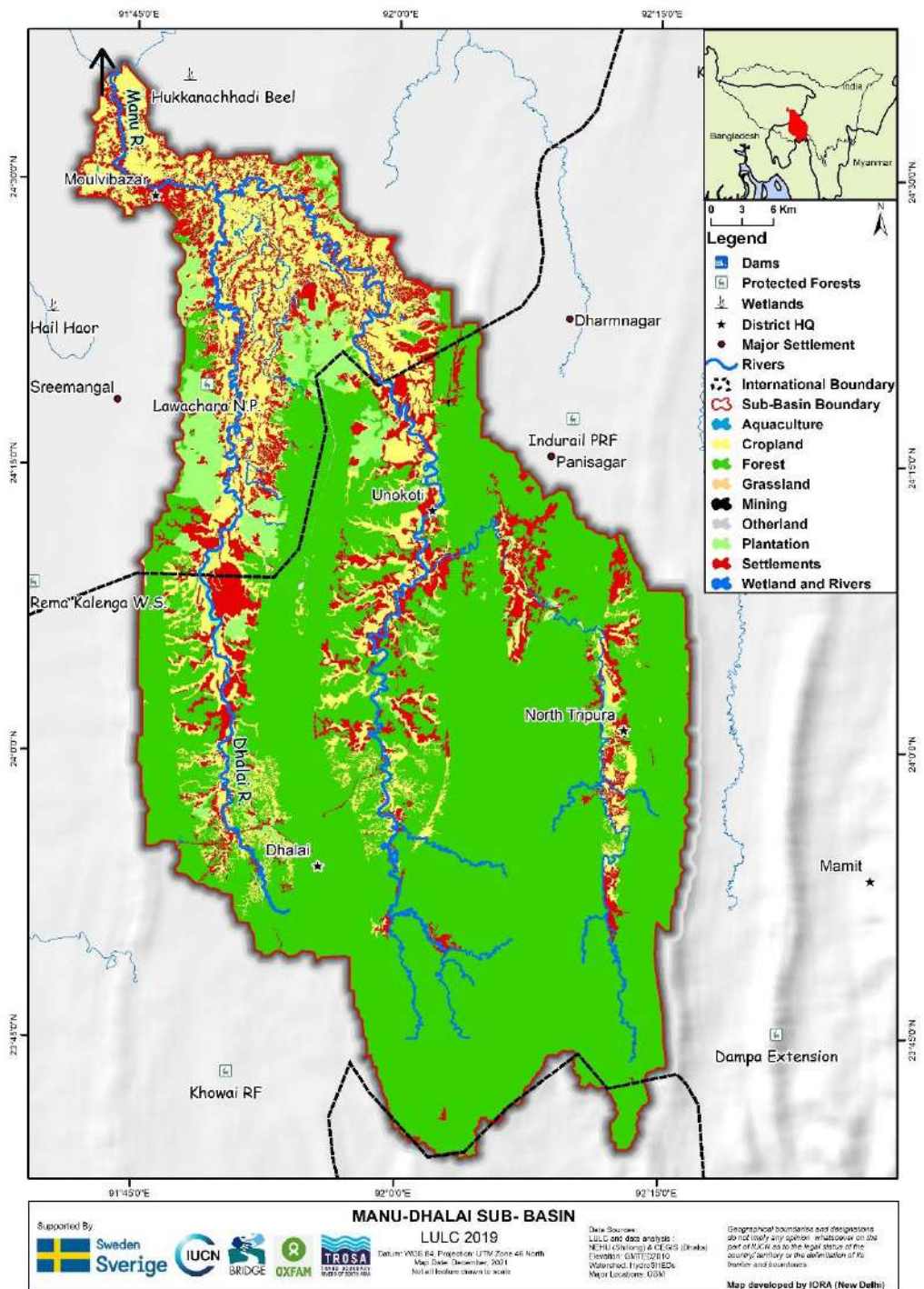
TUIVAI SUB-BASIN LULC 2019

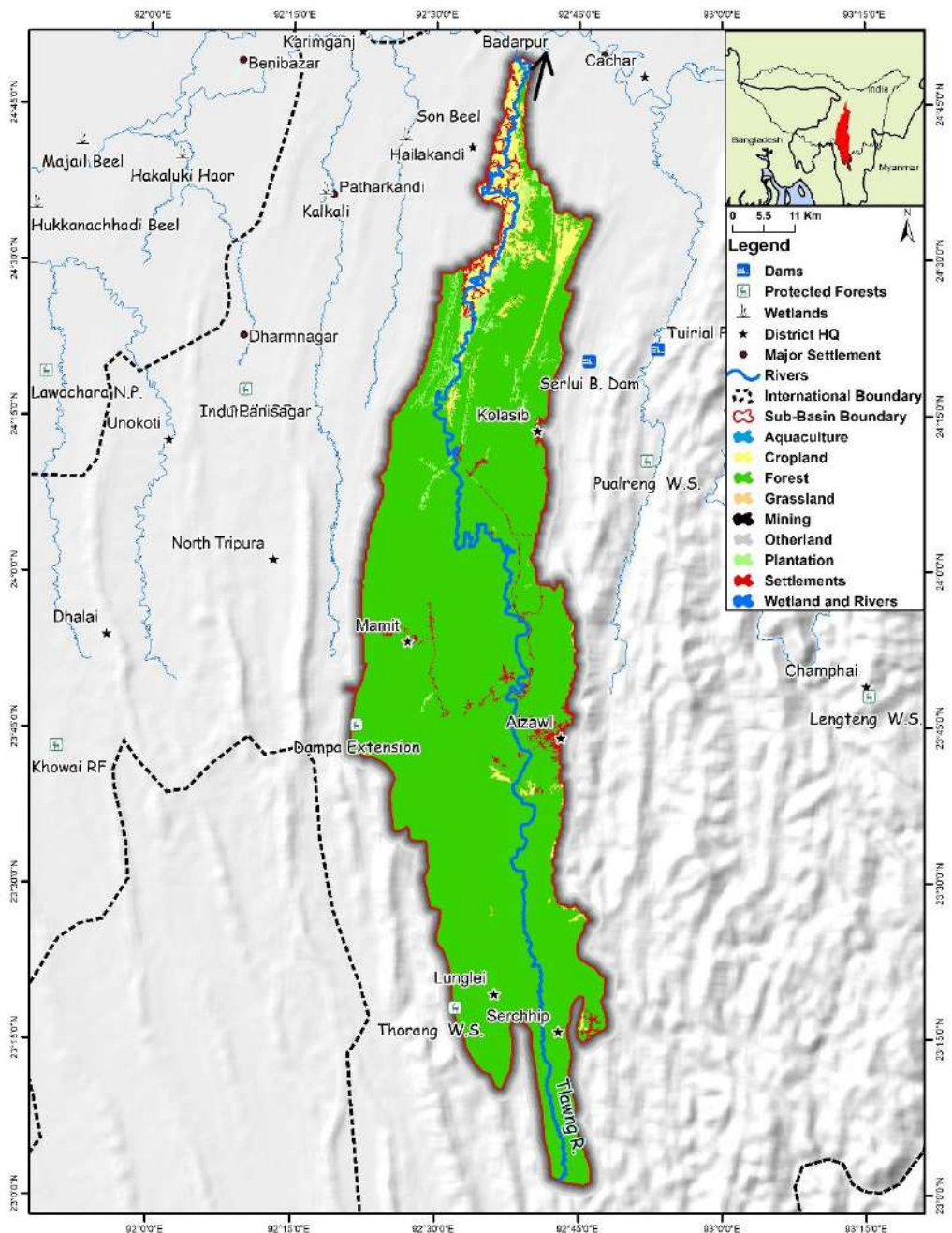
Datum: WGS 84, Projection: UTM Zone 46 North
Map Date: December, 2021
Not all feature drawn to scale

Data Sources:
LULC and data analysis :
NEHU (Shillong) & CEGIS (Dhaka)
Elevation: GMTED2010
Watershed: HydroSHEDs
Major Locations: OSM






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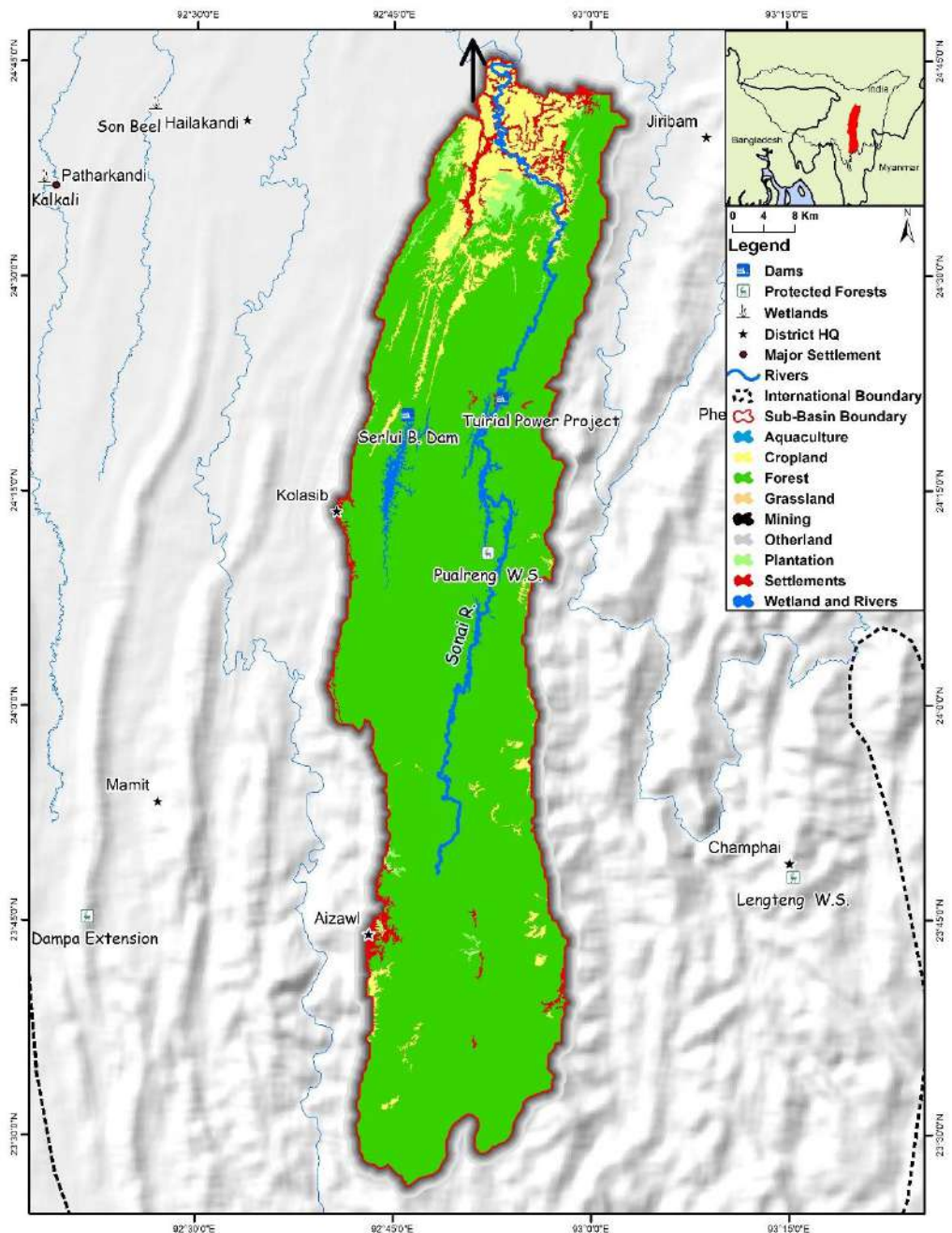
TLAWNG SUB-BASIN
LULC 2019

Supported By:     

Data Sources: LULC and dam analysis: NEHU (Shillong) & IIT Guwahati (Dibrugarh)
Elevation: SRTM30 PLUS
Watershed: HydroSHEDS
New Locations: OSM

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Legend

- Dams
- Protected Forests
- Wetlands
- District HQ
- Major Settlement
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- International Boundary
- Sub-Basin Boundary
- Aquaculture
- Cropland
- Forest
- Grassland
- Mining
- Otherland
- Plantation
- Settlements
- Wetland and Rivers

SONAI SUB-BASIN
LULC 2019

Supported By

Data Sources:
LULC and data analysis: NEHU (Shillong) & IIT Guwahati (Dispur)
Elevation: SRTM30 PLUS
Watershed: HydroSHEDS
Major Locations: OSM

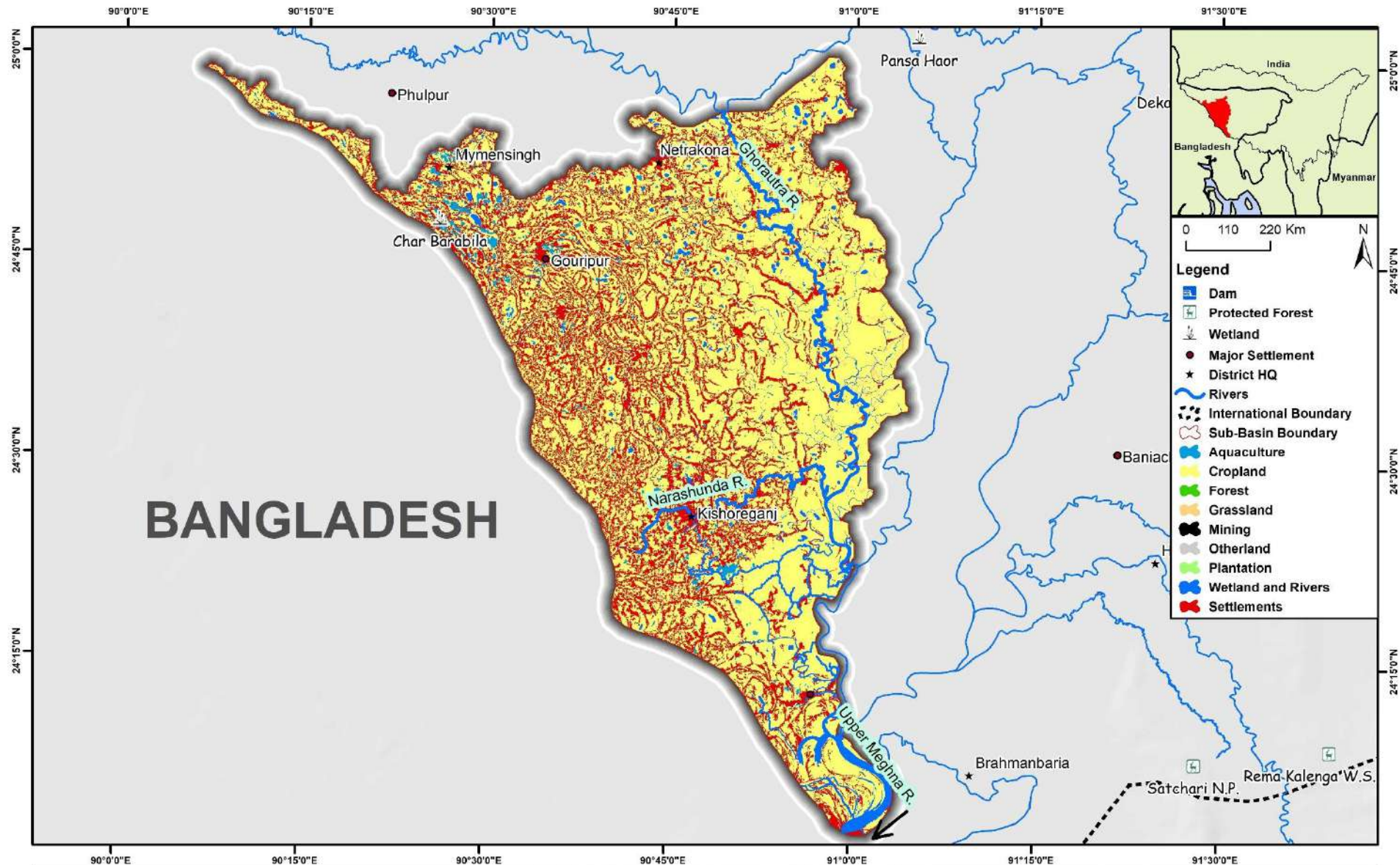
Geographical boundaries and designations do not imply any opinion whatsoever on the part of ICRA as to the legal status of the country/territory or the delimitation of its borders and boundaries.

Map developed by ICRA (New Delhi)

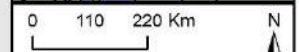
Datum: WGS 84 Projection: UTM Zone 48 North
Map Date: December, 2021
Not all features shown to scale



***2019 land use maps -
Meghna sub-basins (fully in Bangladesh)***



BANGLADESH



- Legend**
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 - Aquaculture
 - Cropland
 - Forest
 - Grassland
 - Mining
 - Otherland
 - Plantation
 - Wetland and Rivers
 - Settlements

Supported By:



GHORATRA-NARASHUNDA SUB-BASIN

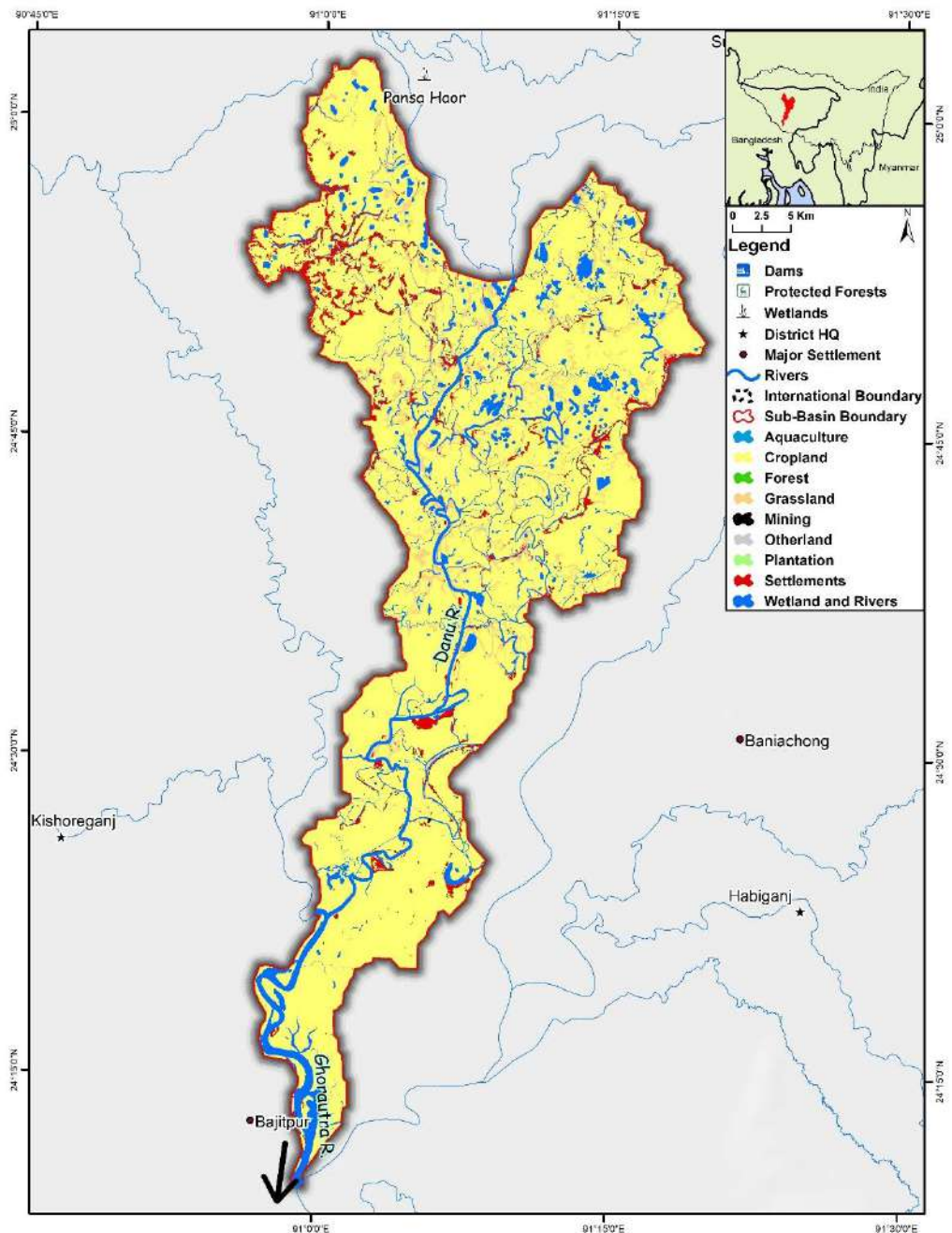
LULC 2019

Datum: WGS 84, Projection: UTM Zone 46 North
 Map Date: December, 2021
 Not all feature drawn to scale

Data Sources:
 LULC and data analysis :
 NEHU (Shillong) & CEGIS (Dhaka)
 Elevation: GMTED2010
 Watershed: HydroSHEDs
 Major Locations: OSM

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Map developed by IORA (New Delhi)



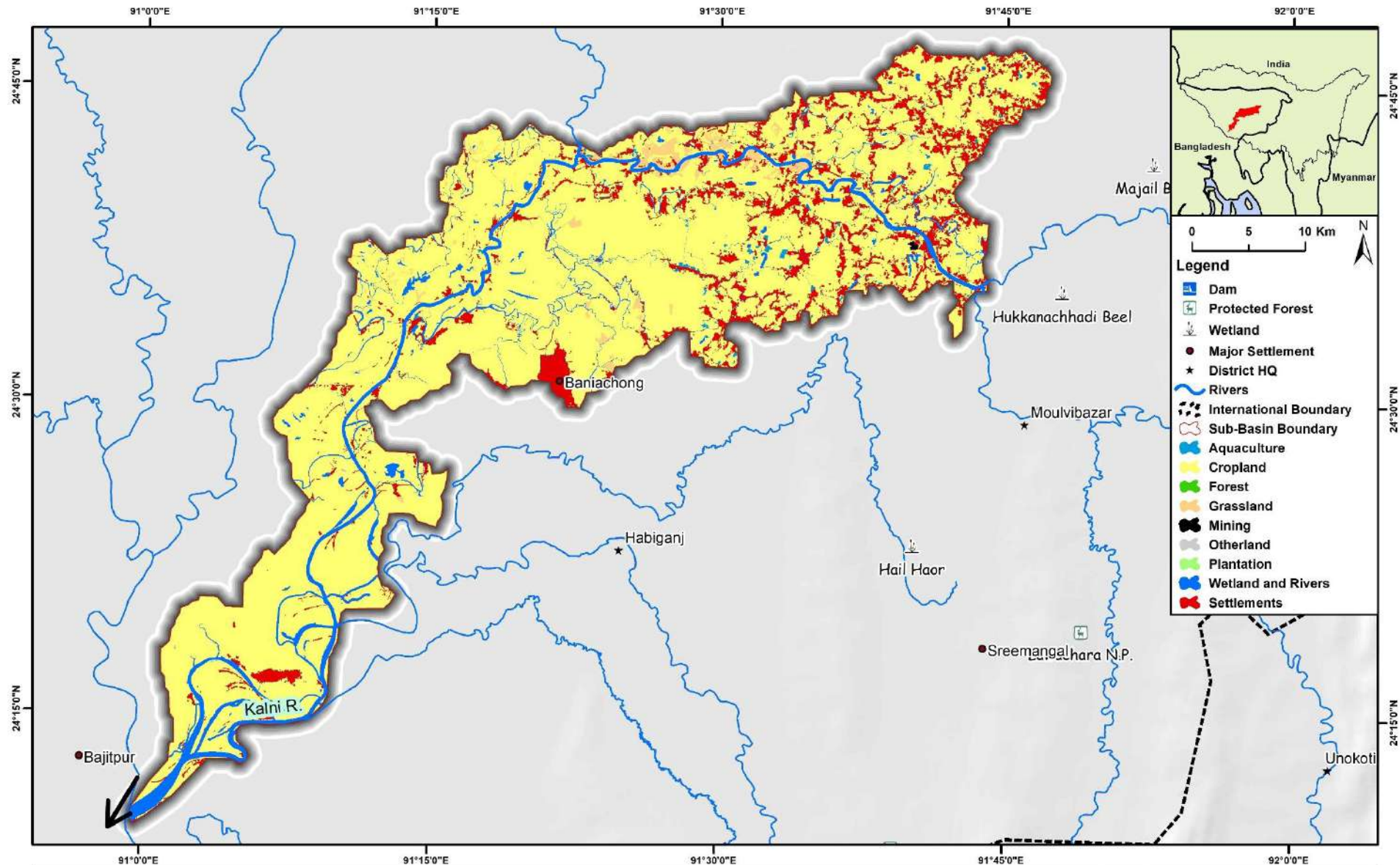
DANU SUB-BASIN
LULC 2019

Supported By: Sweden (Sverige), IUCN, BRIDGE, OXFAM, TRISA

Data Sources: NALC and data analysis: NEHU (Shillong); A.TE GIS (Dibrui); Elevation: SRTM30 PLUS; Wetlands: IUCN/WWF; Major Settlements: USGS

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Map developed by ICRA (New Delhi)



Supported By:



KALNI SUB-BASIN LULC 2019

Datum: WGS 84, Projection: UTM Zone 46 North
Map Date: December, 2021
Not all feature drawn to scale

Data Sources:
LULC and data analysis :
NEHU (Shillong) & CEGIS (Dhaka)
Elevation: GMTED2010
Watershed: HydroSHEDs
Major Locations: OSM

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Thank you!

