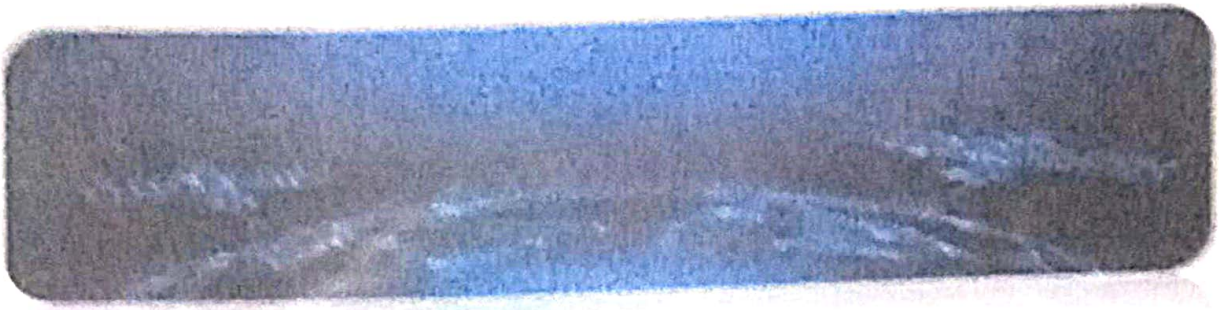
REMOTE SENSING & GIS



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PROJECT WORK

COURSE- B.A. HONORS IN GEOGRAPHY

PAPER TITLE- REMOTE SENSING & GIS

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CONTENTS

QGIS

INTRODUCTION:

QGIS is a free and open-source cross-platform desktop geographic information system application that supports viewing, editing, printing and analysis of geospatial data.

FUNCTION:

QGIS functions as geographic information system software, allowing users to analysis and edit spatial information, in addition to composing and exporting graphical maps. QGIS supports raster, vector and mesh layers. Vector data is stored as point, line, or polygon features. Multiple formats of raster images are supported and the software can georeference images. QGIS can display multiple layers containing different sources or depictions of sources. In order to prepare a printed map with QGIS, a print layout is used. It can be used for adding multiple map views, labels, legends, etc.

DEVELOPMENT:

Gary Sherman began the development of Quantum GIS in early 2002, and it became an incubator per project of the Open Source Geospatial Foundation in 2007. Version 1.0 was released in January 2009. In 2013, along with the release of version 2.0 the name was officially changed from Quantum GIS to QGIS to avoid confusion as both names had been used is parallel. As of 2007 2011, QGIS is avaiable for multiple operating systems including Mac OS X, Linux, Unix, and Microsoft Windows. A mobile version of QGIS was under development for Android as of 2014.

CURRENT VERSION OF QGIS

i) Debian / Ubuntu
ii) Fedora
iii) Open SUSE
iv) Mandriva
v) Slackware
vi) Flatpak
vii) Arch Linux

HISTORY OF GRASS

The GRASS project began in February 2002, protected by a development team of Gary Sherman. The first release was in July of that year, the first version supported only post GIS.

REMOTE SENSING AND GIS

REMOTE SENSING

Remote sensing is the acquisition of information about an object or phenomenon without making physical contact with the object, in contrast to in situ or on-site observation. The term is applied especially to acquiring information about Earth and other planets. Remote sensing is used in numerous fields, including geography, land surveying and most earth science disciplines (e.g. hydrology, ecology, meteorology, oceanography, glaciology, and geology) it also has military intelligence, commercial, economic, planning, and humanitarian applications among others.

GIS

A geographic information system is a computer system for capturing, storing, checking and displaying data related to positions on Earth's surface.

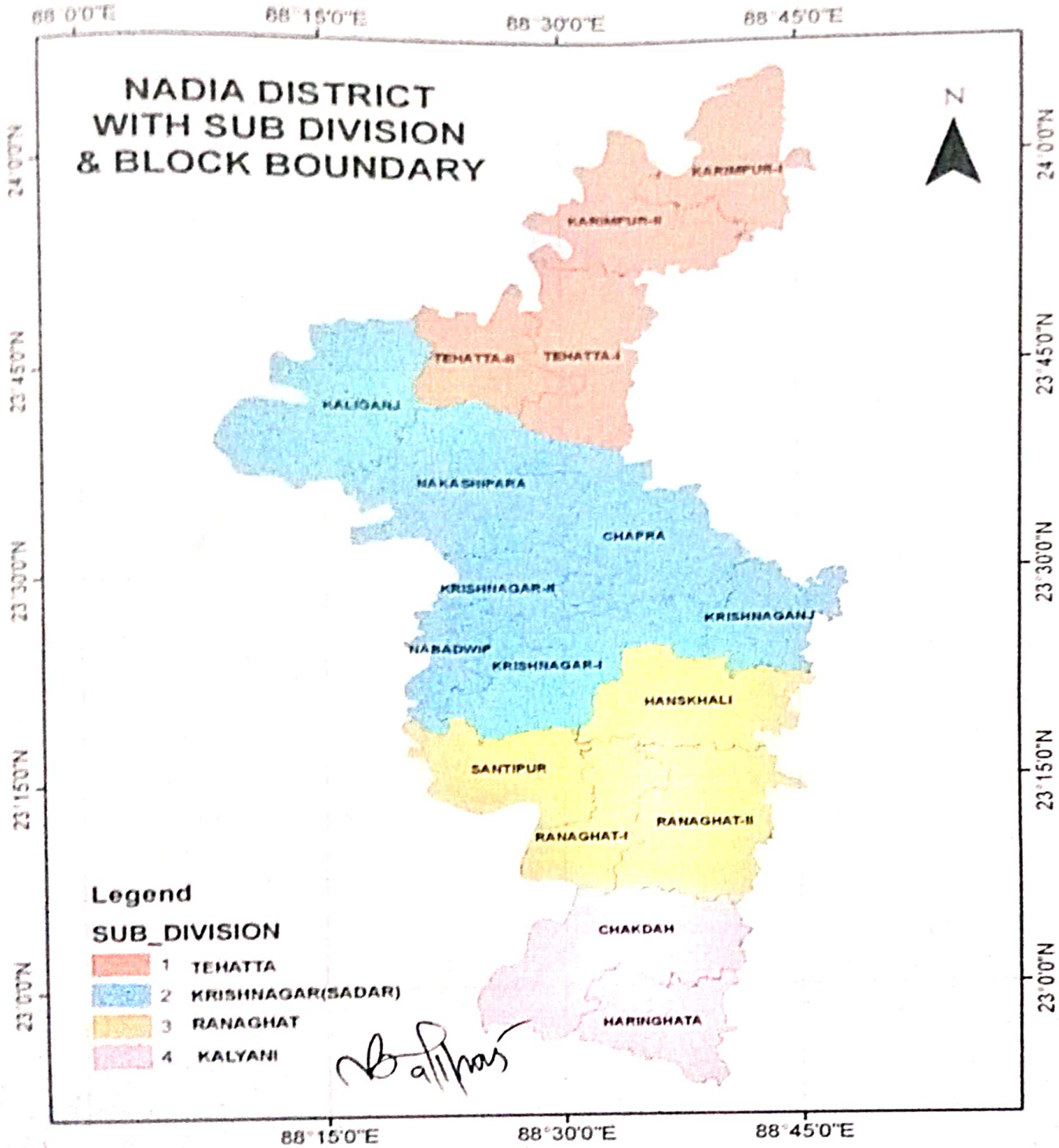
DATA MODEL OF GIS

In GIS two representational models are dominant, raster (grid-based) and vector (line-based).

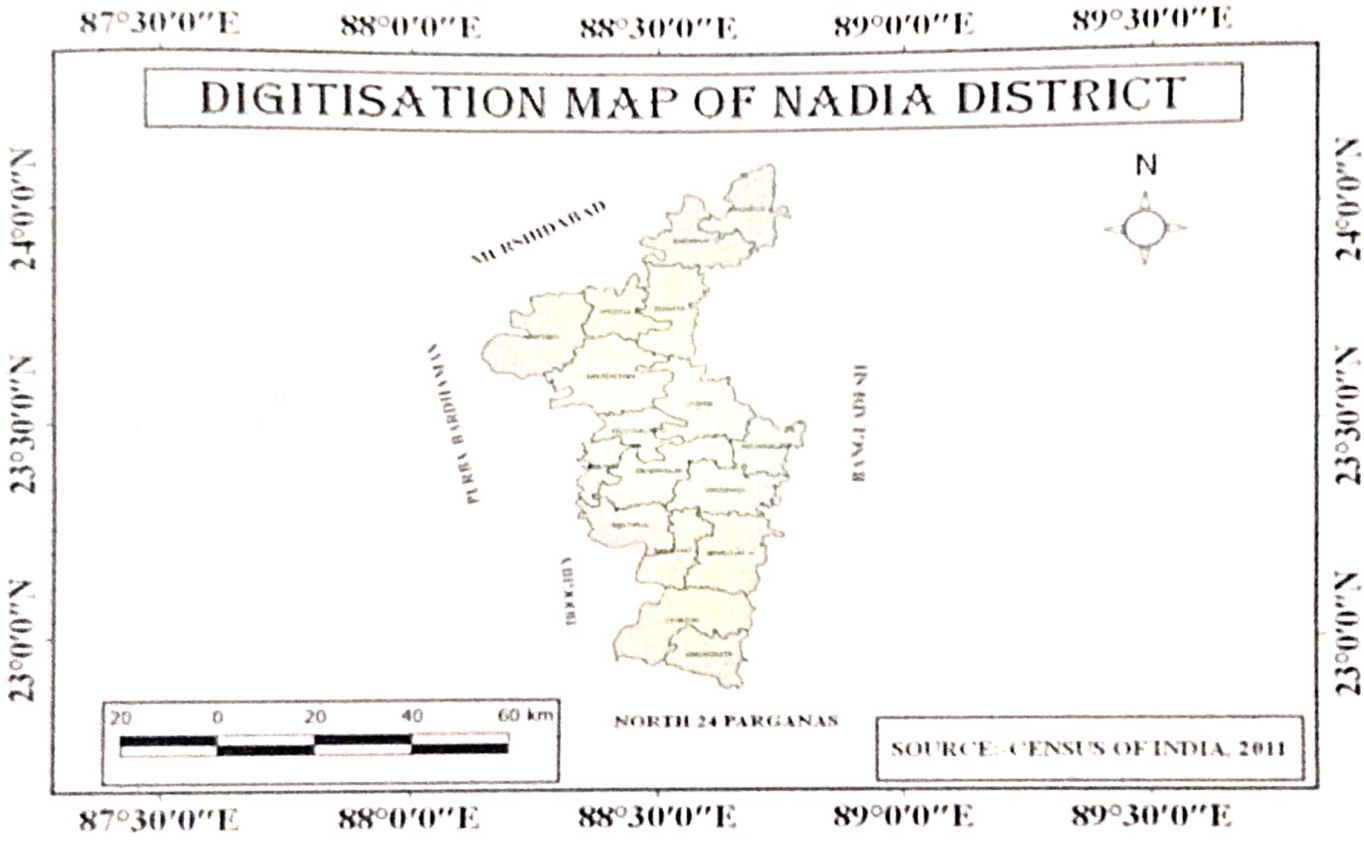
RASTER DATA

Raster datasets represent geographic features by dividing the world into discrete square or rectangular cells laid out in a grid. Each cess cell has a value that used to represent some characteristics of that locations. Such as temperature, elevation or spectral value.

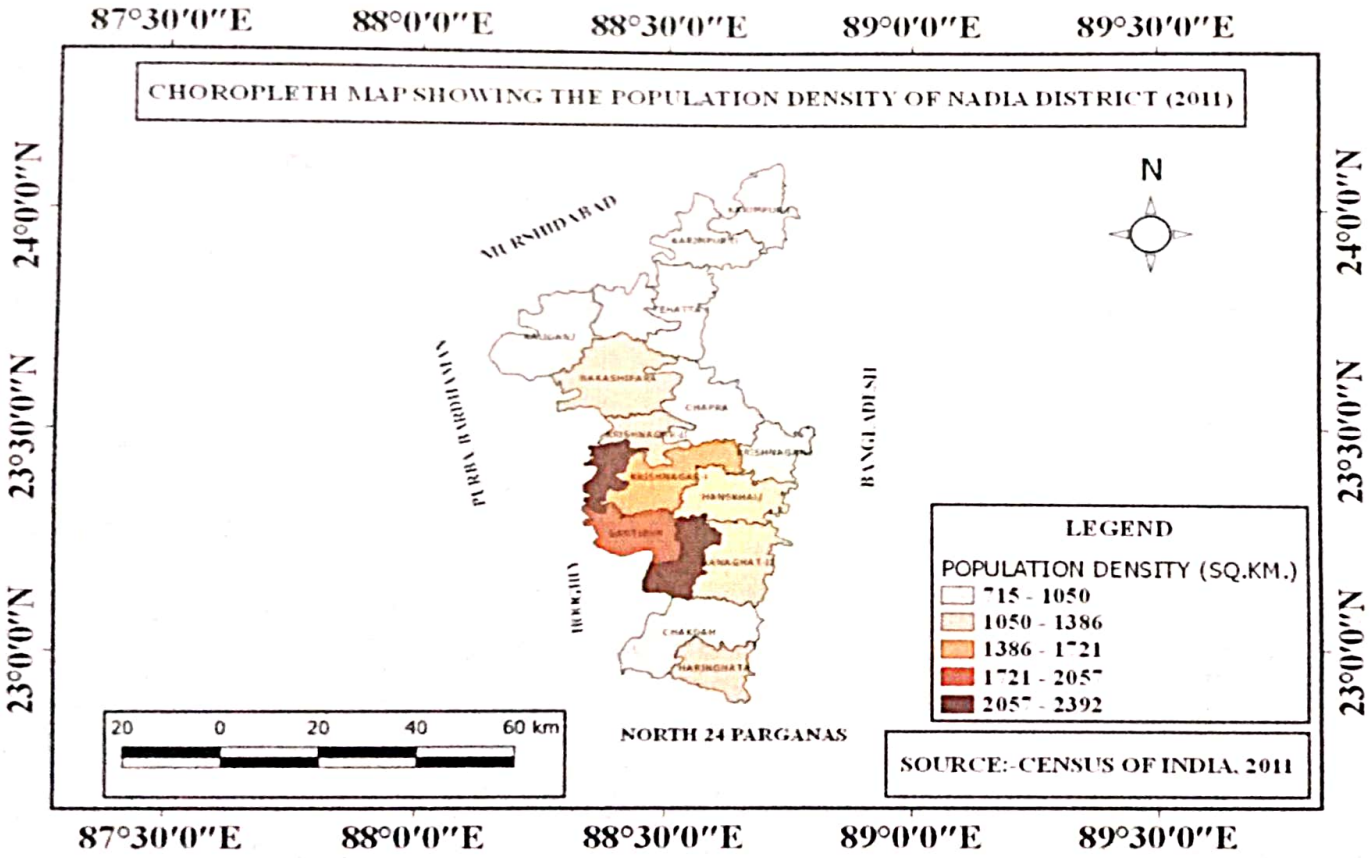
vector data is what most people think of when they consider spatial data. Data in this format consists of points, lines or polygons. At its simplest level, vector data comprises individual points stored as co-ordinate pairs that indicate a physical location on the world.


NADIA DISTRICT
WITH SUB DIVISION
& BLOCK BOUNDARY
N
88°0'0"E
88°15'0"E
88°30'0"E
88°45'0"E
24°0'0"N
23°45'0"N
23°30'0"N
23°15'0"N
23°0'0"N
KARIMPUR-I
KARIMPUR-II
TEHATTA-II
TEHATTA-I
KALIGANJ
NAKASHIPARA
CHAPRA
KRISHNAGAR-II
KRISHNAGANJ
NABADWIP
KRISHNAGAR-I
HANSKHALI
SANTIPUR
RANAGHAT-II
RANAGHAT-I
CHAKDAH
HARINGHATA
Legend
SUB_DIVISION
1 TEHATTA
2 KRISHNAGAR(SADAR)
3 RANAGHAT
4 KALYANI

Digitised Map of Nadia District



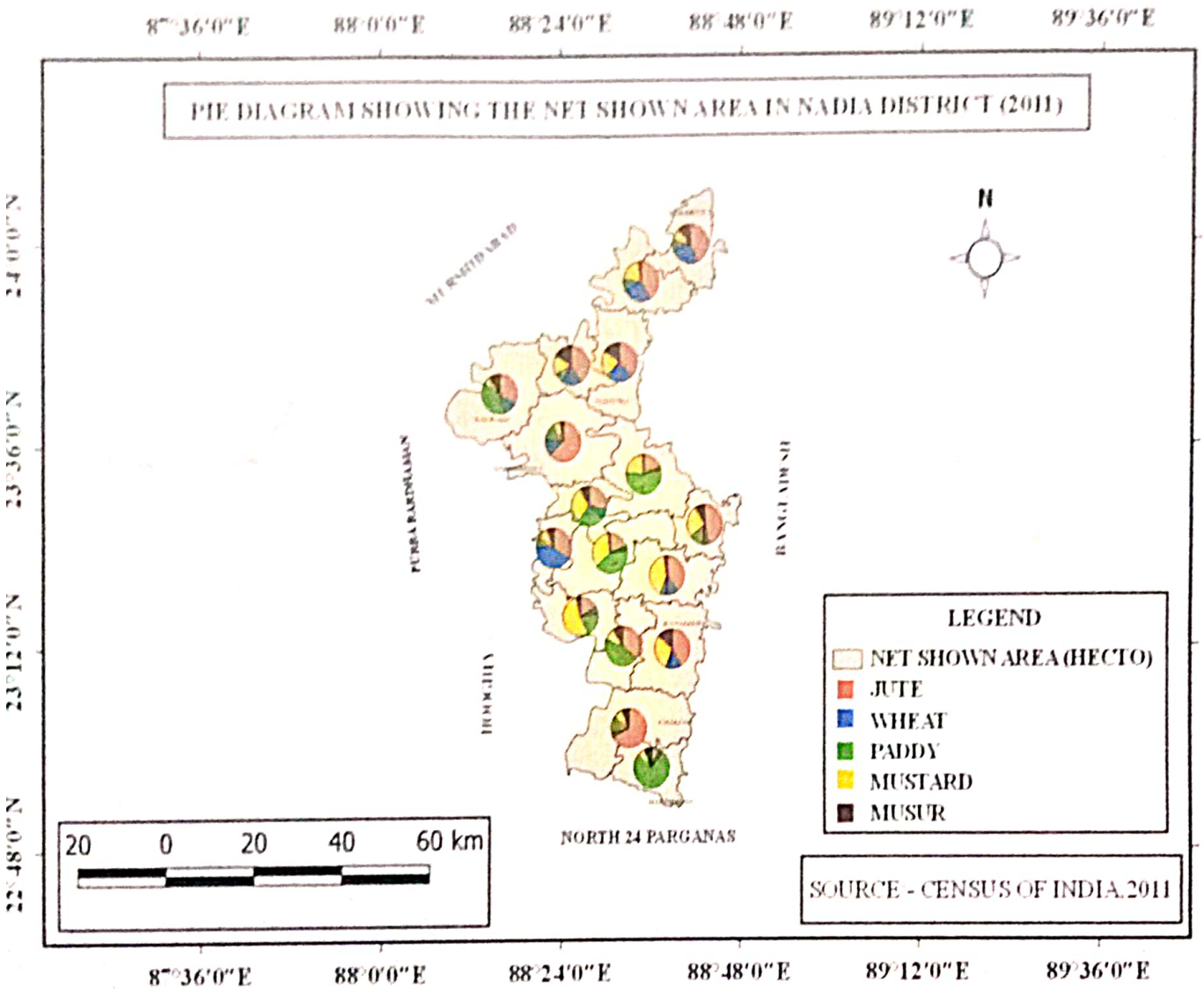
Choropleth Map
Showing the Population Density of Nadia District (2011)



INTERPRETATION OF CHOROPLETH MAP

A choropleth map is a type of statistical thematic map. To draw the map the population density data of Nadia district has been collected from PCA (Primary Census Abstract, 2011). A choropleth map shows the characteristics of people distribution of an area in different colours. Through the map, it can be observed that the southern part of this map shows the highest population density ~~distribution~~ The main reason for population density distribution is that the communication system is optimal for the urbanization of the area and migration of people # to the area opportunities. The choropleth map shows that population ~~dest~~ density is very low in Kanimpur I, Kanimpur II, Tehatta II and Krishnaganj. Due to less developed communication, population density is low in Tehatta, Kaliganj and Chapra. Medium population is found in Krishnagar I, Krishnanagar II, Nakshipara. High population density area is found in Hanskhali, Ranaghat II, Haringhata and the northern part of Nadia district has very high population density, in blocks like Nabadwip, Ranaghat I, Chakdaha, Shantipur. However, by the choropleth map its clear that the population density is uniform for reasons due to lack of urban amenities, migration, poor infrastructural facilities & or developed communications systems.

Pie Diagram showing the net shown area in Nadia District (2011)



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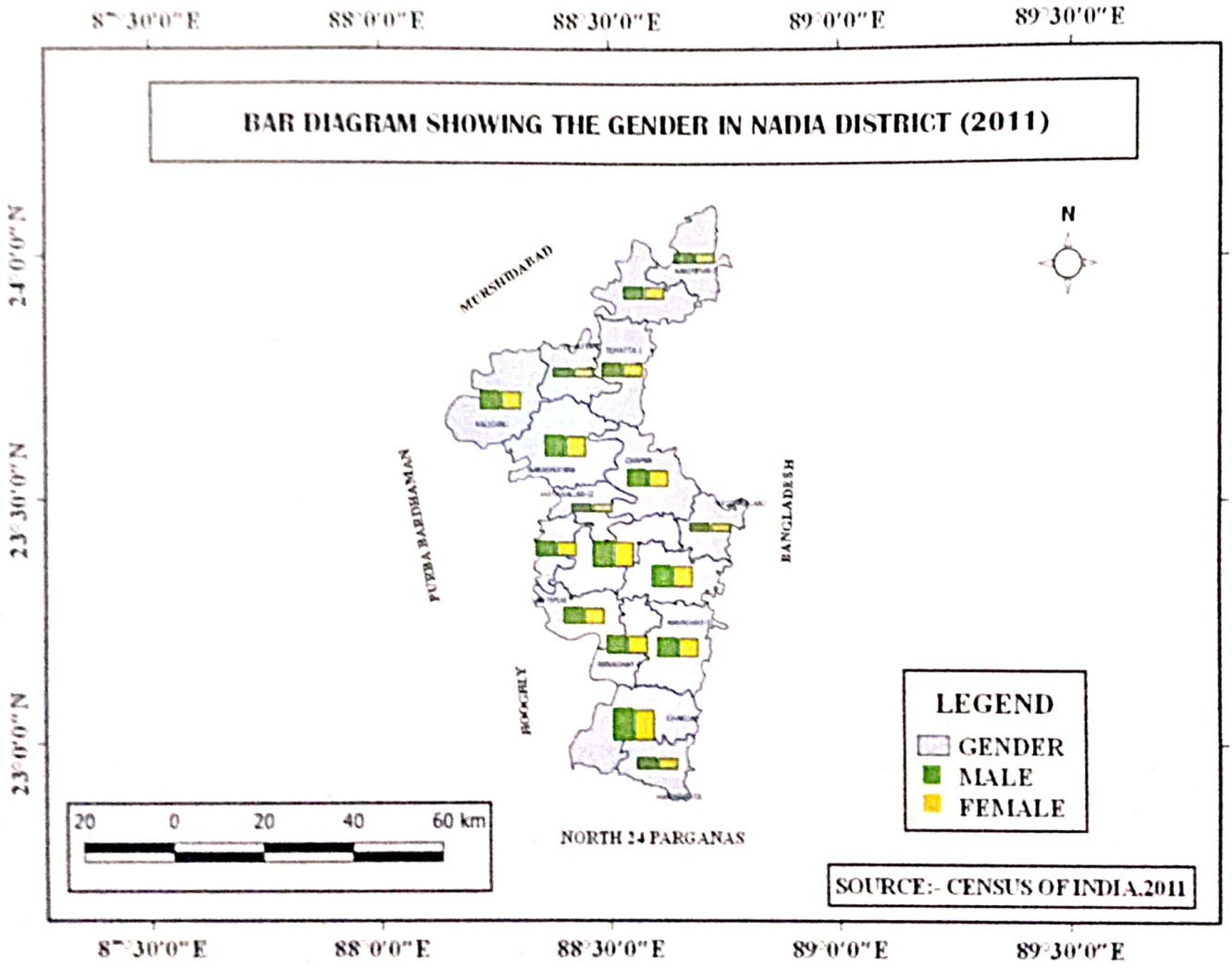
INTERPRETATION OF PIE DIAGRAM

The pie diagram was drawn with the help of the data collected from PCA, Nadia. It shows that for Jute cultivation, Karimpur I is the most net shown area with the number of 14127 and Haringhata is the lowest net shown area with the number of 2383. For Wheat cultivation, Karimpur I is the most net shown area with number of 8268 and Ranaghat I is the lowest net shown area with the number of 93. For Paddy cultivation, Haringhata is the most net shown area with the number of 24942 and Ranaghat II is the lowest net shown area with the number of 342. For Mustard cultivation. Krishnanagar I is the most net shown area with the number of 12992 and Chakdah is the lowest net shown area with the number of 845. For Musur cultivation, Tehatta I is the most net shown area withe number of 4371 and Hanskhali is the lowest net shown are with the number of 354.



Balihwas

Interpretation of Bar Diagram:

Many people get GNSS and GPS technology confused. A good way to think about Global Navigation Satellite Systems is as the umbrella behind GPS. The Global positioning system is a GNSS constellation. But GNSS is not always GPS. GPS is one of the 5 GNSS constellation used around the world. The 5 GNSS constellation used include GPS, QZSS, BEIDOU, GALILEO and GLONASS. We'll review each of these constellations in depth in the post below.

Navigation satellite timing and Ranging United States GPS ~~system~~ system. It used 24 satellites. 1978 the first journey begins.

QZSS

The Quasi-Zenithal Satellite System is the regional Satellite system from Japan and currently uses one geostationary satellite orbit and three in the QSO orbit.

BEIDOU

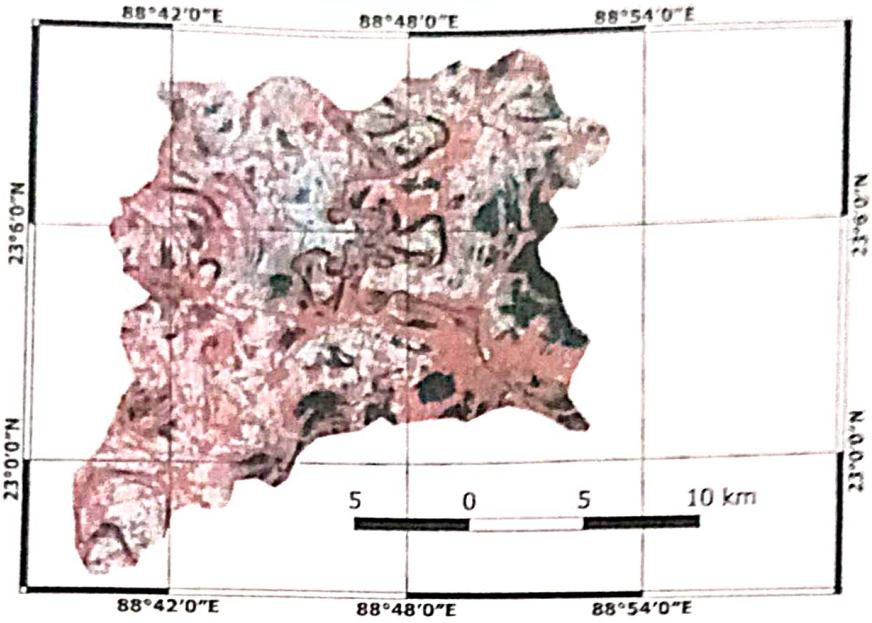
The BEIDOU Navigation Satellite System is a Chinese satellite navigation system. It consists of two separate Satellite Constellations. The first BEIDOU system officially called the BEIDOU satellite navigation Experimantal system and also known as BEIDOU-1 consisted of three Satellites which, beginning in 2000 offered limited coverage and navigation services Mainly for users in China and neighbouring regions. BEIDOU-1 was decommissioned at the end of 2021. The second generation of the system officially called the Beidou Navigation Satellite System and also known as Compass or Beidou-2 became operational in China in December 2021. it has been offering services to Customers in the Asia Pacific region.

GALILEO

Landsat Satellite Image of Bongaon CD Block, 2014

Path - 138, Row – 44, Date of Acquisition – 08 November 2014

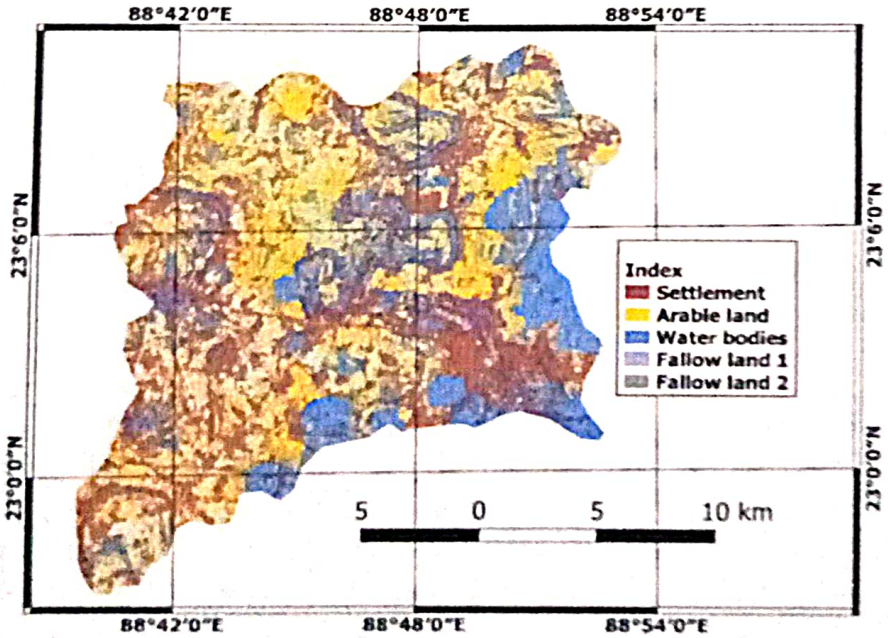
Sensor- TM5, Band – 432 (RGB)



Land use and Land Cover of Bongaon CD Block, 2014

Path - 138, Row – 44, Date of Acquisition – 08 November 2014

Sensor- TM5, Band – 432 (RGB)



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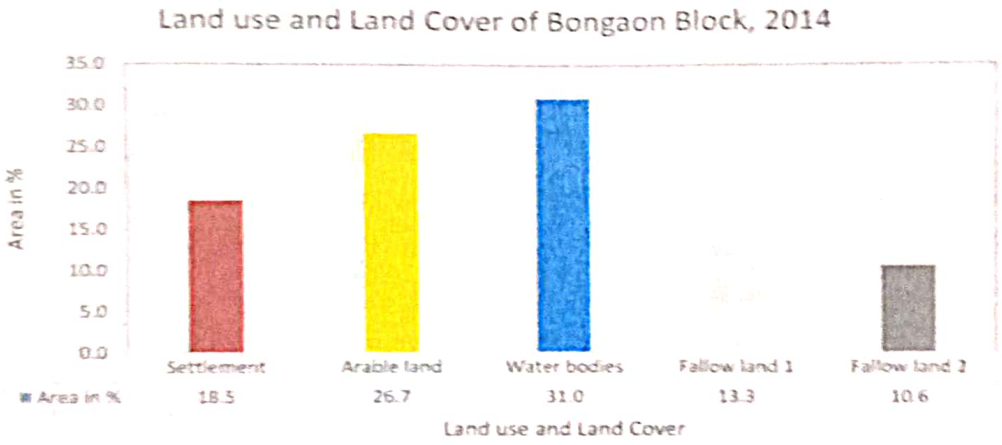
Land use and Land Cover of Bongaon CD Block, 2014

Land use and Land Cover	Area in km^2	Area in %
Settlement	62.1522	18.5
Arable land	89.6049	26.7
Water bodies	104.0499	31.0
Fallow land 1	44.6319	13.3
Fallow land 2	35.5689	10.6



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