PROJECT REPORT

ON

AGRICULTURE AND SOCIO-ECONOMIC CONDITION

(A CASE STUDY IN PIJUPARA VILLAGE, KAMRUP , ASSAM)

SUBMITTED TO

DEPARTMENT OF GEOGRAPHY

B. P. CHALIHA COLLEGE, NAGARBERA

SUBMITTED BY

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B.A. 6TH. SEM. (MAJOR) –

ROLL:UA-191-003 NO. 0245

REG. NO.19002465OF 2021/22

DEPTT. OF GEOGRAPHY

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18/7/2022

PATTERN OF LAND USE CHANGE IN PIJUPARA VILLAGE OF NAGARBERA REVENUE CIRCLE,ASSAM

A PROJECT REPORT SUBMITTED TO DEPT.OF GEOGRAPHY,B.P.C COLLEGE NAGARBERA FOR PARTIAL FULFILMENT OF B.A 6TH SEMESTER EXAMINATION 2021-22

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Occupational pattern and Changing work participation in Nagarbera Revenue circle

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STATUS OF EDUCATION AND OCCUPATION IN NAGARBERA RC: A GEOGRAPHICAL STUDY

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PROJECT REPORT

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(A CASE STUDY IN PIJUPARA VILLAGE, KAMRUP , ASSAM)

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PROJECT REPORT

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SUBMITTED TO

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A PROJECT REPORT SUBMITTED TO DEPT.OF GEOGRAPHY, B.P.C COLLEGE NAGARBERA FOR PARTIAL FULFILMENT OF B.A 6TH SEMESTER EXAMINATION 2021-22

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A PROJECT REPORT SUBMITTED TO DEPT.OF GEOGRAPHY, B.P.C COLLEGE NAGARBERA FOR PARTIAL FULFILMENT OF B.A 6TH SEMESTER EXAMINATION 2021-22

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DEPARTMENT OF GEOGRAPHY
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Certificate

This is to certify that the Field book report, submitted to the Department of Geography, B.P. Chaliha College, in partial fulfilment for the award of the degree of Bachelor of B.A in Geography (SIX Semester Paper Name: Field Techniques in Geography, Paper code: GGY-HC-6026), is a record of bona fide work carried out by **MR. RANADIP DAS**, Roll No. **UA-191-003-0248**, under my supervision and guidance.

All help received by him from various sources have been duly acknowledged.

No part of this report has been submitted elsewhere for award of any other degree.

Bishnu Ram Talukdar 18/7/22

Prof. Bishnu Ram Talukdar
Head, Department of Geography
B.P. Challiha College, Nagarbera
Place: Nagarbera, Assam
Date: 18 JULY, 2022

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RANADIP DAS
B.A 6TH SEMESTER

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CHAPTER 1

INTRODUCTION

1.1 STATEMENT OF THE PROBLEM

The land is a crucial natural resource and an important determinant of the socio-economical health of a country. In India, on the basis of land use pattern, the area of the country was divided into five categories in 1950-51 which are forest,Land not available for cultivation(Land put to non-agricultural uses, and Barren and Uncultivated land),Other uncultivated lands excluding fallow lands(Permanent pastures and other grazing lands, Miscellaneous trees and groves not included in the net area sown),Fallow land-Old fallow and Current fallow ,Net sown area.

Unfortunately, about 70% of the good quality agricultural land has gone out of agriculture (Urbanisation, industrialization, and development of roads and railways, etc.) and the former fallow land, pastures, and degraded forests areas have been brought under agriculture. There are significant spatial and temporal changes in the patterns of land use in India. A report analysis done by the Food and Agriculture Organization of the United Nations, states that by 2050, over 500 million hectares area of new agricultural land will be needed to meet the global food demand.According to the Intergovernmental Platform on Biodiversity and Ecosystem Services (IPBES), over 70% of all-natural, ice-free land in the world is affected by human use and this could further rise to 90% by 2050.

There are various reasons responsible for this. One of the important reason is Population Growth – In India, the rapidly growing population and the consequent high pressure on the existing resources have an adverse effect on the land resources. The cities are expanding and getting urbanized far beyond their formal limits.Another important reason is Land Encroachment and extensive use of forest resources.An increase in food and shelter demands have resulted in expansion by encroaching the uncultivated land areas and forest, shrubs, and wetlands.The IPCC report on climate change and land has stated that agricultural land for food, Animal feed and fiber are behind the land-use change.In recent days it has been found that Over Grazing has evolved as a major reason for land use pattern change that can

be seen. The farmers are abandoning their cultivated land for grazing purposes due to decline in its soil fertility status.

On a small scale the repercussions may be small and cannot be sewn that much earlier but the land use pattern change take place in a large in a steady manner as it is going at present then it can be dangerous. There are various management measures and strategies that can be adopted in this regard. One of the most important strategies being Smart Forest and Land Management .It include some management strategies like the improved cropland management, livestock management, agroforestry, and reduced post-harvest losses will help in land restoration. Also, an improvement in land grazing by animals and forest fire management is required. Another one is responsible Land Governance, which is the key for better land–use adaptation and for improving the livelihoods of many small-scale farmers. It will also enable ecosystem restoration and biodiversity protection. India is a member of UNCCD, and being a party of this agreement, India has the opportunity to adopt an ambitious resolution on land use pattern change and landholdings. There is an urgency to slow down and reverse the land-use change.

Pijupara is a village of Nagarbera revenue circle.It is located adjacent to our college.I have heard people saying about the changes that have come over land use pattern in this village since what it was earlier.There are people from various socio economic background that live in this village who are direct or indirectly dependent on land in various ways.With an aim to understand the nature of land use pattern of pijupara village this study was carried out.It will also try to look into the factors responsible for changes that may have come over q decade in land use pattern.

1.2 REVIEW OF RELATED LITERATURE

DEKA ET.AL(2014), Did the study describes the land use and land cover dynamics in kamrup district of Assam from 1991 to 2011 using remote sensing and geography information system (915).satellite remote sensing and GIS acts as an affective approach for analyzing the direction ,rate and spatial pattern of land use dynamics . land sat TM and ETM +for the period 1991 ,2001 and 2011 were used to prepare the land use /land cover (LULC) map for different periods .

They used methodology employed consists of an objective – oriented classification approach for LULC mapping and a post classification change detection technique for quantifying the change for twelve major land use and land cover types .And they indicate the results that severe land cover changes have occurred in built –up (+45:82%), wetlands (-39.45%), croplands (+4.16%)and forest cover (-3.09%)areas .they are looked out that most of the areas have been compensated to expansion in areas under builtup and cultivated lands .

NATH B ET.AL(2021) Did the study of Impact of urbanization on land use and land cover change in Guwahati city , india and its implication on declining groundwater .Urban environment continues to expand at an unprecedented rate to meet the demand of increasing population and economic development. The resulting changes to landscapes have increased stress to hydrological cycles , biogeochemical processes ,and environmental sustainability of natural resources .This study evaluated spatio-temporal changes of land use and land cover (LULC)between 1990 and 2020 in Guwahati city ,india . time –series landsat satellite images were analyzed using.

Tuner B.L. etc (9195) said that land use and land cover change is significant to a range of themes and issues central to the study of global change. The alterations it effects in the surface of the earth hold major implication for sustainable development and livelihood system and also contributes to change in the biogeochemical cycles of the earth, affecting the atmospheric greenhouses and other trace gase.

Meyer, W.B.,etc(1994) said that human actions are altering the terrestrial environment at unprecedented rates, magnitudes and spatial scales. Land cover change stemming from human and uses represent a major element of global environmental change.A division of the world according to common situations of environment human driving forces , and land cover dynamics will be followed by detailed study of the processes at work within each situation . The result will from the basis for a concurrent effort to developed a global land model that can offer projection of patterns of land tersformation

Eric F Lambin, Helmut j Geist etc., 2008, said that "This book present recent estimates on the rate of change of major land classes."

Aggregated globally, multiple impacts of local land changes are shown to significantly affect central aspects of Earth system functioning. The book offers innovative development and applications in the fields of modelling and scenario construction. Conclusions are also drawn about the most pressing implications for the design of appropriate intervention policie .

Billie L Turner , Helmut j Geist, etc. said that common understanding of the causes of land-use and land-cover change is dominated by simplifications which, in turn, underlie many

environment-policies. This article tracks some of the major myths on driving forces of land-cover and proposes alternative pathways of change that are better supported by case study evidence. Cases reviewed support the conclusion that neither population nor poverty alone constitute the sole and major underlying causes of land-cover change worldwide. Rather, peoples responses to economic opportunities, as mediated by institutional factors, drive land-cover changes. Opportunities and constraints for new land uses are created by local as well as national markets and policies. Global forces become the main determinants of land-use change, as they amplify or attenuate local factors.

1.3 OBJECTIVE OF THE STUDY

The main objectives of the present study are-

1.To analyse the land use pattern for 2001 and 2011 in Pijupara village

2.To find out the changes in land use pattern in Pijupara village and the reason associated for such change.

1.4 METHODOLOGY AND DATABASE

At the very beginning, due to being living/inhabiting in a village which is located adjacent to the college campus and seeing people of the village(study area) talking frequently about the pattern of land use change ,the idea to take this topic and the study area arose Initially the study area and pattern of land use change was checked through Google earth.The map of nagarbera revenue circle was taken from circle office and from there Pijupara village map was extracted.The study is basically based on secondary data.District census hand book of Kamrup(R) district was followed thoroughly both for the year 2001 and 2011.Due to lack of time there is no primary data and most of the work is based on secondary data.Along with this published papers,thesis and journals were also followed.The data collected through secondary sources were then processed, tabulated, analysed and interpreted with the help of graphs,pie diagrams charts etc.

1.5 SIGNIFICANT OF THE STUDY

Land is a crucial natural resource and an important determinant of a country's socioeconomic and ecological health. Given the finite supply of land resource, sustainable use and management of land resources is a necessity for the wellbeing of people of a country. Land-use change has broad lines of impact, with a potential for influencing economic growth, quality of life, management of environmental resources and national food supply.Land-use change takes place through human activity in several ways. For example, in Indonesia, about 500 sq km of forest area are cleared each year, much of which is replaced with oil palm plantations. Another pattern of changing land use is seen in expanding cities. In many countries, including India, cities are expanding well beyond their formal limits, either along intercity corridors or in other directions. The specific patterns of urban growth of a city and its periphery have implications for poverty, food, water, health, jobs and access to services.Various forces shape these patterns of urbanisation, transforming land use from agriculture and forests into industry, residential and commercial buildings and associated infrastructure and horticulture. Often the contested spaces of peri-urban areas (outside city limits but not quite part of the rural hinterland) become sites from which groundwater is pumped and transported to the city, where new industrial zones are developed, where urban waste is dumped and where vegetables and other high-value crops are grown for nearby urban centres.Interventions like converting agricultural land for housing or industry, filling up ponds and building housing complexes on lake beds, etc. impact ecosystem services and climate adaptation. These especially affect the poor who are largely reliant on ecosystems for their livelihoods.Land use and land use changes can significantly contribute to overall climate change. Vegetation and soils typically act as a carbon sink, storing carbon dioxide that is absorbed through photosynthesis. When the land is disturbed, the stored carbon dioxide—along with methane and nitrous oxide— is emitted, re-entering the atmosphere. Carbon dioxide, methane and nitrous oxide are greenhouse gases, which contribute to global warming. The clearing of land can result in soil degradation, erosion and the leaching of nutrients; which can also possibly reduce its ability to act as a carbon sink. This reduction in the ability to store carbon can result in additional carbon dioxide remaining in the atmosphere, thereby increasing the total amount of greenhouse gases

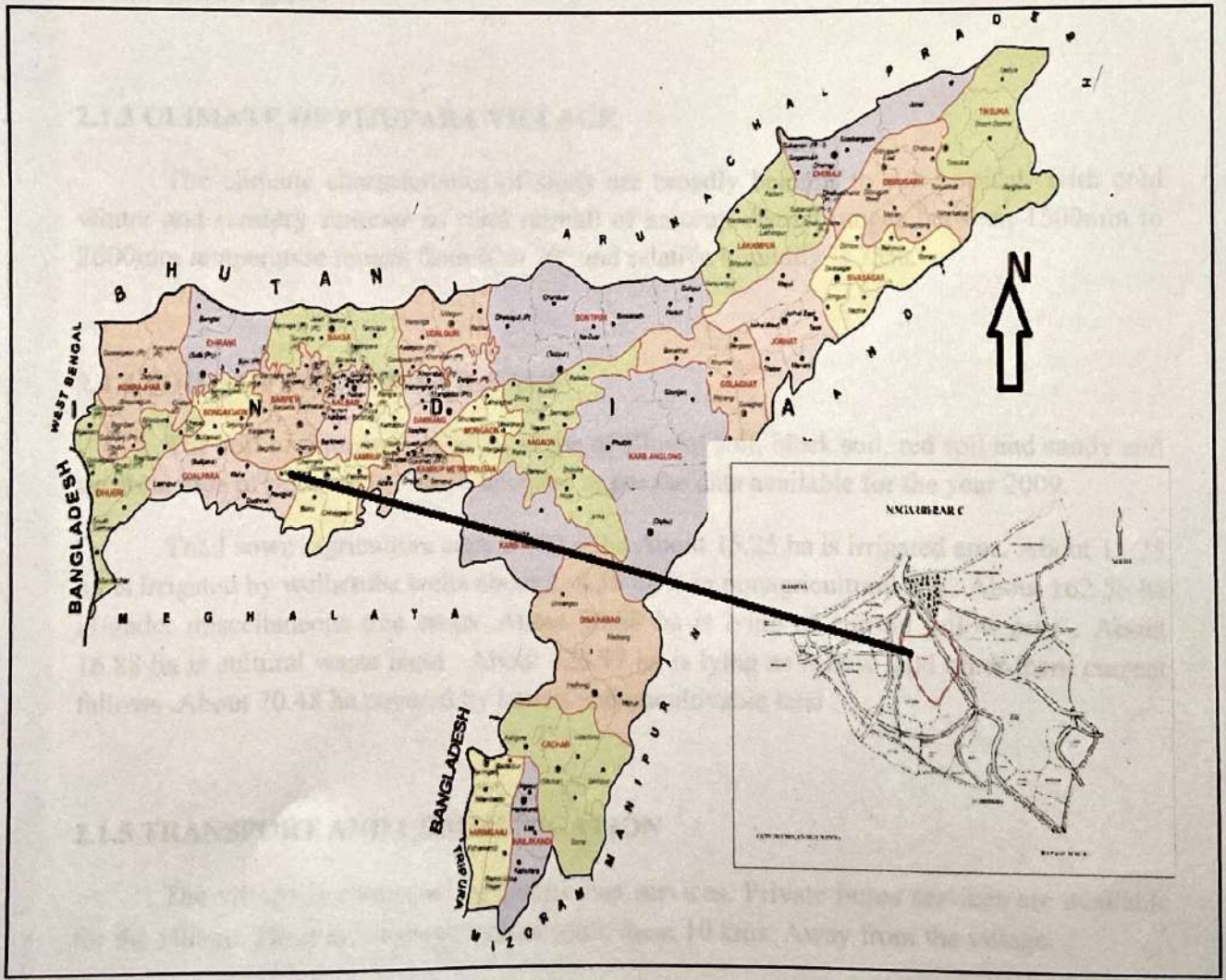
The study of land use pattern and its change is important because the way people use the land available to them has a significant impact on their present and future.Land-use changes

CHAPTER-2

GEOGRAPHICAL AND SOCIO ECONOMIC BACKGROUND OF THE PIJUPARA VILLAGE

2.1 GEOGRAPHICAL BACKGROUND IN PIJUPARA VILLAGE

2.1.1 LOCATION OF PIJUPARA VILLAGE



Pijupara is a village in nagarbera Revenue circle, kamrup district , Assam ,situated in northern bank of river Brahmaputra and pijupara village is located in nagarbera subdivision of kamrup district in assam india.it is situated 10km away from sub district headquarter nagarbera and 100km away from district headquater amingaon longitudinal location in pijupara villge catitude 26.11 N and longitude 91.83E .

2.1.2 PHYSIOGRAPHY OF PIJUPARA VILLAGE

The physiography of the study are is dominated by the charland or alluvial soils the courses of the river Brahmaputra and its tributaries are main topographic features of the study area .there are number of sandbars and fertile sandbars (char lands)within the channel of the river Brahmaputra which exhibits a well-developed braided channel pattern the countable hill of the area is nagarbera hill which is situated on the northern west part of the study area large number of wetlands that are locally cocled beels is the another important physiographic feature of the region .

2.1.3 CLIMATE OF PIJUPARA VILLAGE

The climatic characteristics of study are broadly belongs to sub-tropical with cold winter and semidry summer an rural rainfall of kamrup district ranges between 1500mm to 2600mm temperature ranges from 6°to 39° and relative humidity is 75%.

2.1.4 SOILS OF PIJUPARA VILLAGE

The soil of pijupara village is a type of alluvial soil, black soil, red soil and sandy soil the total area of pijupara is 738.78 hectares as per the data available for the year 2009.

Total sown /agriculture area is 102.63ha About 15.25 ha is irrigated area. About 15.25 ha is irrigated by wells/tube wells about 238.38 ha is in nonagricultural use . About 162.56 ha is under miscellaneous tree crops .About 20.88 ha is lying as current fallow area . About 16.88 ha is cultural waste hand . About 126.97 ha is lying as follow land other them current fallows .About 70.48 ha covered by barren and uncultivable land .

2.1.5 TRANSPORT AND COMMUNICATION

The village is connected by public bus services. Private buses services are available for the village. There is a railway station more them 10 kms. Away from the village.

2.2 SOCIO-ECONOMIC BACKGROUN OF PIJUPARA VILLAGE

Socio-Economic Background Of The Pijupara Village, 2001

In pijupara village are total area 739 hectare.There household number is 619. The total population of pijupara village is 3563 and there male person are 1862 and female are1701. And this area are total literate person is 1898, male literate 1140 and female literate 758. And total illiterate person in the area was 1665, male illiterate 722 and female illiterate 943. In this village total worker is 953, male worker 830 and female worker 105. And main worker are 832,male worker 789 and female 43. Total cultivators of the pijupara village are 132, male cultivators 127 and female cultivators 05. Agricultural labour 16, male labour 12 female labour 04. Total household industry worker 19,male worker 17 and female 02. And other workers are 665, male worker 633 and female worker 32.

Socio-Economic Background Of The Pijupara Village, 2011

In pijupara village are total area 738.78 hectare.There household number is 783. The total population of pijupara village is 4071 and there male person are 2090 and female are1981. And this area are total literate person is 2661, male literate 1509 and female literate 1152. And total illiterate person in the area was 1410, male illiterate 581 and female illiterate 829. In this village total worker is 1527, male worker 1172 and female worker 355. And main worker are 1187,male worker 1025 and female 162. Total cultivators of the pijupara village are 233, male cultivators 227 and female cultivators 06. Agricultural labour 23, male labour 08 female labour 15. Total household industry worker 18,male worker 08 and female 10. And other workers are 913, male worker 782 and female worker 131.

CHAPTER-3

PATTERN OF LAND USE CHANGE IN THE PIJUPARA VILLAGE

3.1 AN ANALYSIS OF LAND USE FOR 2001 AND 2011

As per the following data and diagram. LAND USE IN PIJUPARA VILLAGE,2001

Land use component	Land Use	In Degree
Forest	0	0
Irrigated	16	8.048064832
Unirrigated	333.5	167.7518513
Cultural Waste	280.1	140.891435
Area Not Available For Cultivation	86.1	43.30864888
Total Area	**715.7**	**360**

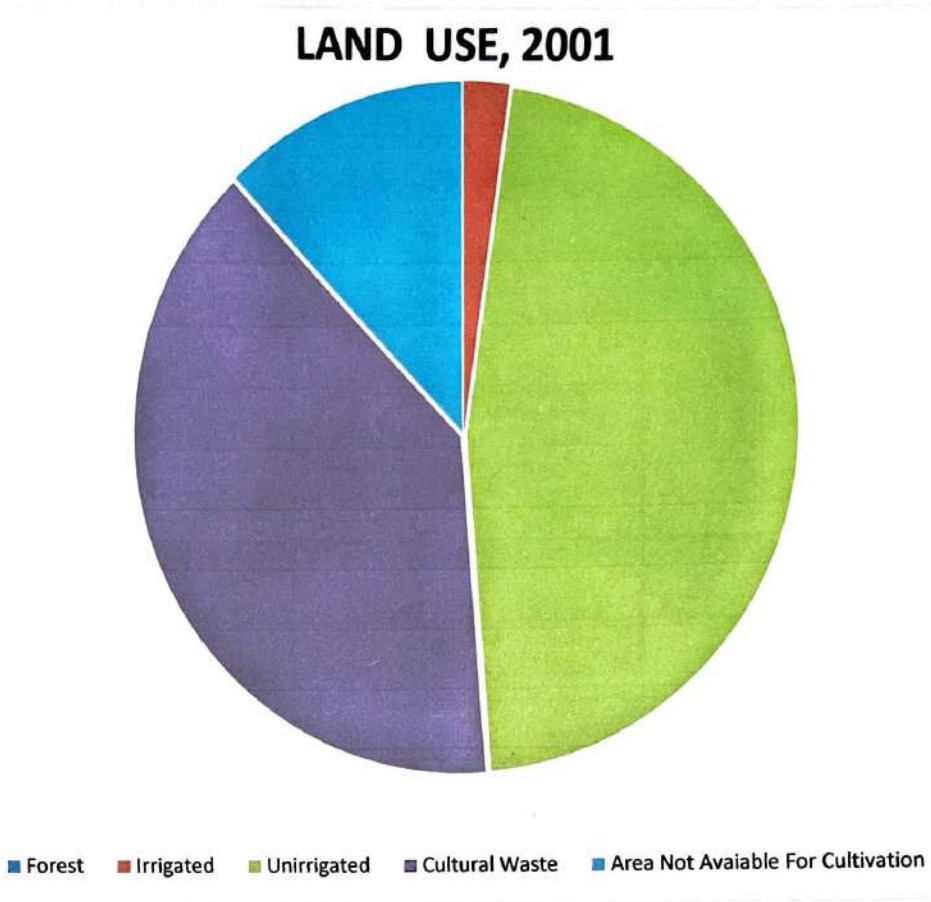


Fig.3.1

Source:District cencus handbook,2001

As per available data from the year in 2001 maps reports and datasts of pijupara on topography land use land cover (LULC), watershed/hydrological parameters etc.the The total land use and pijupara village are 715.7 hectare. The pijupara village land use as see the irrigated area 16 hectare. About the unirrigated land was 333.5 hectare. About 280.1 hectare cultural waste land . About the area not available for cultivation is 86.1 hectare.

Total area of Pujupara is 738.78 Hectares as per the data available for the year 2009.

Total sown/agricultural area is 102.63 ha. About 87.38 ha is un-irrigated area. About 15.25 ha is irrigated area. About 15.25 ha is irrigated by wells/tube wells.

About 238.38 ha is in non-agricultural use. About 162.56 ha is under miscellaneous tree crops.

About 20.88 ha is lying as current fallow area. About 16.88 ha is cultural waste land. About 126.97 ha is lying as fallow land other than current fallows. About 70.48 ha is covered by barren and un-cultivable land.

LAND USE IN PIJUPARA VILLAGE,2011

Land use component	Land Use	In Degree
Forest	0	0
Irrigated	162.6	119.85
Unirrigated	238.4	175.72
Cultural Waste	16.9	12.46
Area Not Available For Cultivation	70.5	51.96
Total Area	**488.4**	**360**

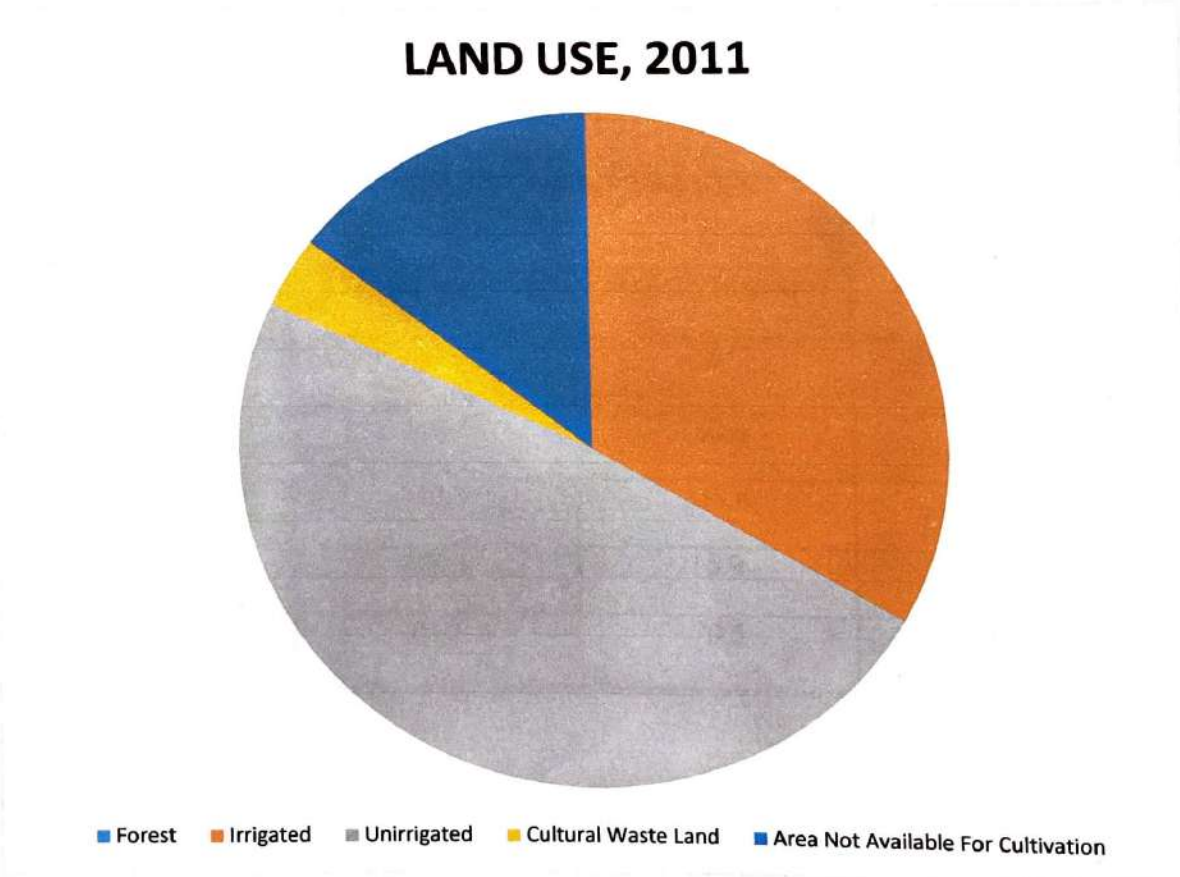


Fig.3.2

Source:District cencus handbook,2011

As per available data from the year in 2011 maps reports and datasts of pijupara on topography land use land cover (LULC), watershed/hydrological parameters etc.the The total land use and pijupara village are 488.4 hectare. The pijupara village land use as see the irrigated area 162.6 hectare. About the unirrigated land was 238.4 hectare. About 16.9 hectare cultural waste land . About the area not available for cultivation is 70.5 hectare.

Total area of Pujupara is 738.78 Hectares as per the data available for the year 2009.

Total sown/agricultural area is 102.63 ha. About 87.38 ha is un-irrigated area. About 15.25 ha is irrigated area. About 15.25 ha is irrigated by wells/tube wells.

About 238.38 ha is in non-agricultural use. About 162.56 ha is under miscellaneous tree crops.

About 20.88 ha is lying as current fallow area. About 16.88 ha is culturable waste land. About 126.97 ha is lying as fallow land other than current fallows. About 70.48 ha is covered by barren and un-cultivable land.

3.2 CHANGES FOUND IN LAND USES AND ANALYSIS OF REASONS ASSOCIATED

Land Use Component	2001 (in Hectare)	2011 (in Hectare)	Difference
Forest	0	0	0
Irrigated	16	162.6	146.6
Unirrigated	333.5	238.4	-95.1
Cultural Waste	280.1	16.9	-263.2
Area Not Available For Cultivation	86.1	70.5	-15.6

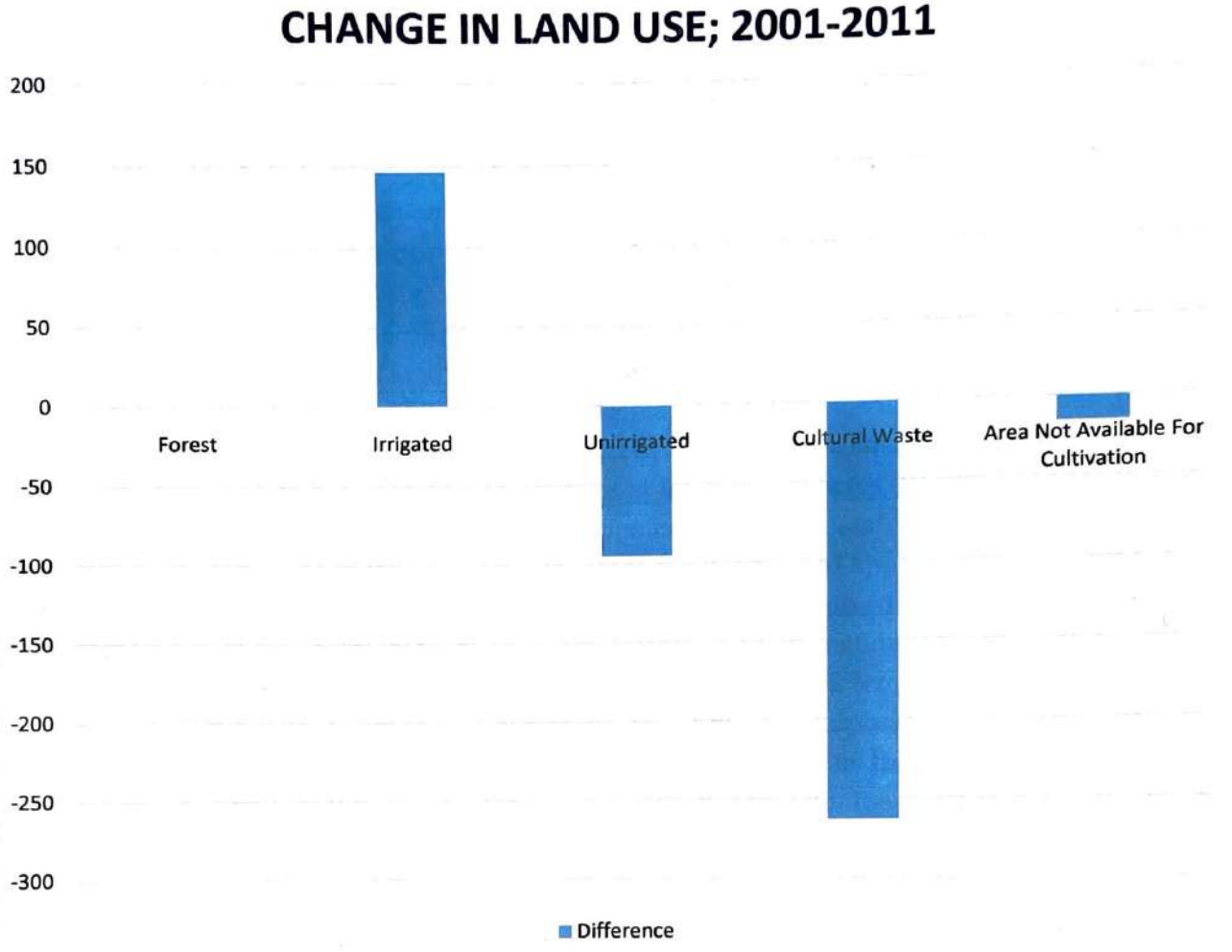

CHANGE IN LAND USE; 2001-2011
200
150
100
50
0
-50
-100
-150
-200
-250
-300
Forest
Irrigated
Unirrigated
Cultural Waste
Area Not Available For Cultivation
Difference

Fig.3.3

The change found the pijupara village in the positive site of irrigate land is increase. And the we can see the forest, unirrigated,cultural waste land, not available for the cultivation is decrease. We found the irrigated land increase 2011,this was an positive thinking of this village. people saying about the changes that have come over land use pattern in this village since what it was earlier.There are people from various socio economic background that live in this village who are direct or indirectly dependent on land in various ways.With an aim to understand the nature of land use pattern of pijupara village this study was carried out.It will also try to look into the factors responsible for changes that may have come over q decade in land use pattern. The difference between 2001 and 2011 land use in pijupara village found the different is the forest is 0 percent about the irrigated land is 146.6 hectare land is increased of pijupara village. About the unrrigated land was 95.1 hectare decrease.about cultural wast land 263.2 hectare id deacrease of pijupara village.about area not available for cultivation in 15.6 hectare is decrease of pijupara village. The urban growth boundary is one form of land-use regulation. For example, Portland, Oregon is required to have an urban growth boundary which contains at least 20,000 acres (81 km2) of vacant land. Additionally, Oregon restricts the development of farmland. The regulations are controversial, but an economic analysis concluded that farmland appreciated similarly to the other land. Land use involves the management and modification of natural environment or wilderness into built environment such as settlements and semi-natural habitats such as arable fields, pastures, and managed woods. Land use by humans has a long history, first emerging more than 10 thousand years ago. It has been defined as "the purposes and activities through which people interact with land and terrestrial ecosystems and as the total of arrangements, activities, and inputs that people undertake in a certain land type. Land use is one of the most important drivers of global environmental change.

CHAPTER 4

4.1 SUMMARY

The theme of the present work is the study of pattern of land use cover in Pijupara village of Nagarbera revenue circle,in Kamrup district of Assam.This study has been made on spatio temporal dimensions of land use features and factor responsible for such change. In this context various informations are collected from district census handbook. for the study of pattern of change in land use 2 years have been taken up and necessary observations are carried out. The present studies forms a unique and knowledge enriched information regarding the changing land use pattern. It can be stated that every year a small amount of change can be seen in land use because of the dynamic nature of human activity But it's study is not possible because such changes cannot be seen clearly in small time interval. Therefore I have tried my best to go forward with the aims and objectives of the study and accordingly the work is organised into four chapter including the chapter of summary and conclusion. The first chapter is devoted to introducing the problem, review of relevant work, objectives of the study, methodology and database involved and significance of the work.In order to fulfil the problem two major objectives were carried out and in the study their fulfilment was tried to be reached. The work is based on certain relevant method of data collection and generation, data processing, map preparation, data representation and analysis.The review of relevant work thought brief includes the reference of local, national and international works done in the line of the present study.The second chapter deals with the locational and situational characteristics, physical setting of the study area.The village is a region of low topography which also sometime leads to the problem of flood. The climate of the study area falls under monsoonal regime characterised by hot moist summer and cool dry winter. The vegetation of the study area mainly consists of grasslands. This chapter also deals with the social economic background presenting a clear picture of the population composition culture and economic condition of the region. Most of the people are indigenous Assamese people along with some households of Bengali Hindu.What is the level of literacy among different people in the study area and different parameters of population composition like sex composition,occupational composition etc are well discussed in this chapter.The transport and communication facility is also quite good in this village. The economy of the study area is mainly based on agriculture but the rate of population engaged in this sector is decreasing. The third chapter discusses the pattern of land use for two respective year that is 2001 and

2011.It includes the analysis of different parameters of land use in two different years. It also deals with the change that has come overtime and what are the reasons associated for such change are also discussed.

4.2 CONCLUSION

After the discussion and analyses of the results in the other mentioned chapter there are few conclusions which are obtained from the present study. The study area is a small village situated in Nagarbera revenue circle.The change that has come overtime in land use pattern can be seen drastic in some aspects while some aspects are not much changed.In case of forests it can be seen that what it was in 2001 is same as no place is allotted to forest till 2011 also. With the increase in technology and peoples inclination toward scientific technique and modernization it has been found that the land allotted to irrigation has increased over here. Due to the spread of awareness and various environment reforms in an around other fringe villages or through social media and other platforms the land area covered by cultural waste has also decreased over year.These above mentioned land use factors are more prominent than other dimensions. The land use change in a global perspective is quite alarming as other factors of the environment are also connected with this. But the village being a small village whatever change that has been seen over year it has not made much change in land use pattern. The present study is thus an approach to gain knowledge about various factors responsible for such change in the pattern of land use. Along with this there are some necessary suggestive measures for the adaptation of the people with such changes and how they(changes) can be checked over time.

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