

A PROJECT REPORT

ON

**LAND USE: A CASE STUDY OF JAIDOH, WESTKHASI HILLS
DISTRICT, MEGHALAYA.**



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PRACTICAL EXAMINATION, NEHU, SHILLONG FOR THE ACCADEMIC
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Dated: Nongstoin

The: 7th May, 2024

CERTIFICATE

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CHAPTER-1 INTRODUCTION

1.1 Introduction:

Land the solid part on the surface of the earth. Land is that part of the earth which is not covered by water. It is a very important space in which almost all human activities takes place. We live on land, we do most of our work on land, settlement, agriculture, industries, transport, and many more activities are mostly perform on land. So it is very important to study about how we human use it for our benefits.

Land use is a term used to describe the use of land, either for agriculture, settlements, transport, dams, mining, industries, recreational purpose, etc.

In order to talk about land use, it is important to understand the different between land use and land cover, since these two words are use simultaneously. Land use is only a term use to describe the use of land for many purposes, while land cover means that which covers the surface or the ground. For example: areas under vegetation, bushes, grasses, water bodies, etc. so these two terms should not be confuse as they are different word with different meaning and used. In this project we will talk mostly about agricultural land use, since agriculture is one of the most important and most dominant activities in the study area, India and even in the whole world.

Agriculture, the most important activities in human history, a life sustaining activities which provide us food, jobs, commercial product and other necessities of life can be define as a practice of Growing and harvesting of Crops. About 70% of India's population depend on Agriculture, it also provide jobs to around 52% of people in India. According to statistical abstract, India, 2007 around 1,92,796 ha which is 63.16% of India's total reporting area (3, 05,269 ha) is used for agriculture, in which the total net sown area is about 1, 41,893 ha (46.48%) and 50,904 ha (16.67%) is area sown more than once.

1.2 Statement of the problem:

India's population as well as the study area and its surrounding population is growing fast, which means more mouth to be fed, more crops to be grown and produce but the net sown area and total cropped area remain almost constant for many decades. In the year 1990-91 the total cropped area is 1,85,742 ha, in 2000-01 the total cropped area is 1,85,373 ha and in 2005-06 the total cropped area is 1,92,796 ha, thus shows that the land use for agriculture in general remain almost static for many years. The change in agricultural land use is very little, while the change in population is very fast, with 844.3 million in 1991, 1027 million in 2001 and 1210 million in 2011.

Not only that agricultural land use remain static, but even our method of cultivation also change very little for many decades and our agricultural production also remain mostly the same. This has led

to many problems like increase in price of food crops and other crops, for example the price of rice Increase from 5-9 rupees per kg in the year 2003 and 30-45 rupees in 2023. This is because of increase in demands while production remains almost the same. Another problem is also the increase of seasonal unemployment and unemployment as a whole. Land is static, it does not change, while the number of people, especially youth has increase a lot, and this led to increase in unemployment, as government and private company cannot keep up with the rate of increase in the number of youth. Land also cannot provide jobs to more people as land is static. Another problem is increase in urbanisation, with the increase in housing, roads, etc; many barren land and even agricultural land are being converted into urban area and urban settlement. One of the big problem in the study area is mist, mist affect the growth of potato, as the potato is affected with bacteria and become inedible, because of this problem many farmers stop growing potato and converted the land which was previously used to grow potato to other land use.

Crops depend on seasons, as different seasons experience different weather. Many crops are grown in one season and not in the other. Hence the land use also changes according to season. In India there are three Growing Seasons, Kharif, Rabi and Zaid. Some agricultural land use also changes with seasons. Some crops are grown in certain area, during some seasons and stop in other season. So the agricultural land use is different according to season in some area. Hence, in this project we will talk more about land use according to season.

1.3 Aims and Objectives:

The project focuses mainly on Land Use especially on Agriculture. The project focus on the following Objectives:-

1. The main aim is to know the land use in agricultural area.
2. To offer suggestion to improve the agricultural activities in the study area.

1.4 Literature Review

A review of relevant literature Contributed by scholars including information gathered from other sources such statistical handbooks, journals and many others to support the project which is very much needed in order to achieve a better understanding of the subject matter.

Studying of land use has much importance; it can help us to solve many problems such agricultural problem, future land planning,

Being integral to all functions of terrestrial ecosystems, soils are intended to produce food for feeding the ever-increasing population of the world (Bouma, 1989; Paustian et al., 2016). However, soils are under prodigious pressure due to competing demands from various sectors of the society in general and diversion of prime arable lands to non – arable uses like urbanisation and industrialisation, in particular (Foley et al., 2011; Erickson et al., 2013). India supports 17.5% of world's population

with only 2.4% of geographical area and 9% arable lands (Srinivasarao et al., 2015), therefore Agriculture Land Use Planning (ALUP) is very Important. Agricultural Land Use Planning is defined as “systematic assessment of land and water potential, alternatives for land use and economic and social conditions for the purpose of selecting agricultural land use which is sustainable for farmers, without degrading the environment” (FAO, 1996).

Studying of land use, with reference to agriculture help us to use land wisely, intensively, to produce more crops, it also help us to plan for the future. According to EDWARD H. GRAHAM 1994, he said, “It is not an easy responsibility, for it is human to think of today's welfare and of this season's crops. We think somewhat, also, of our own futures, but we havenot, as a people, been accustomed to thinking of the future welfare of our country”.

For maximum using of land for agriculture and growing of crops, land management is an important task and having knowledge and a proper understanding about land use in an area can help in achieving this task. The management of cultivated crops is accomplished only by great effort, constant attention to the land, and intensive use. Today that intensity of use is of growing concern, for we are learning that we must temper use of the land with sound management and balance it against the common good (Edward H. Graham 1994).

1.5 Methodology

Different methods have been used for the collection of data, analyzing in this project.

Some of these methods are as follows:

1. Selecting the Subject Matter /Project Title (Land Use: A Case study of Jaidoh, West Khasi Hills District, and Meghalaya).
2. Selection of the Study Area (Jaidoh, West Khasi Hills District, Meghalaya).
3. Preparation of interviewer schedule: Questions for generating information are framed according to the requirement of the survey. Two types of questions are generally asked during the field survey.
 - a. Simple choice question.
 - b. Open ended question
4. Actual Survey: The survey of the subject matter has been conducted in the selected area on the 9th of March, 2024 with the help of the interviewer schedule to investigate the people of that area in order to get the correct information about the population and employment status of that area.
5. Other Information: Some information has been taken from various books, magazines, internet sources, etc. This information that obtained from various books helps to frame the data.
6. For Analyzing of various step are taken, such as calculation of percentage, the formula is below:

$$\text{Percentage} = \text{value} / \text{total value} \times 100$$

GIS work through Qgis and Arcgis

1.6 Source of Data

The sources of data for this field survey are of two types:

- Primary data
- Secondary data.

Primary data: Here, the information is collected from the field through interviewer schedule and observation directly about the living standard of the people.

Secondary data: Here, the information is collected from various sources such as books, Magazines, newspaper, Internet Sources etc.

CHAPTER-2

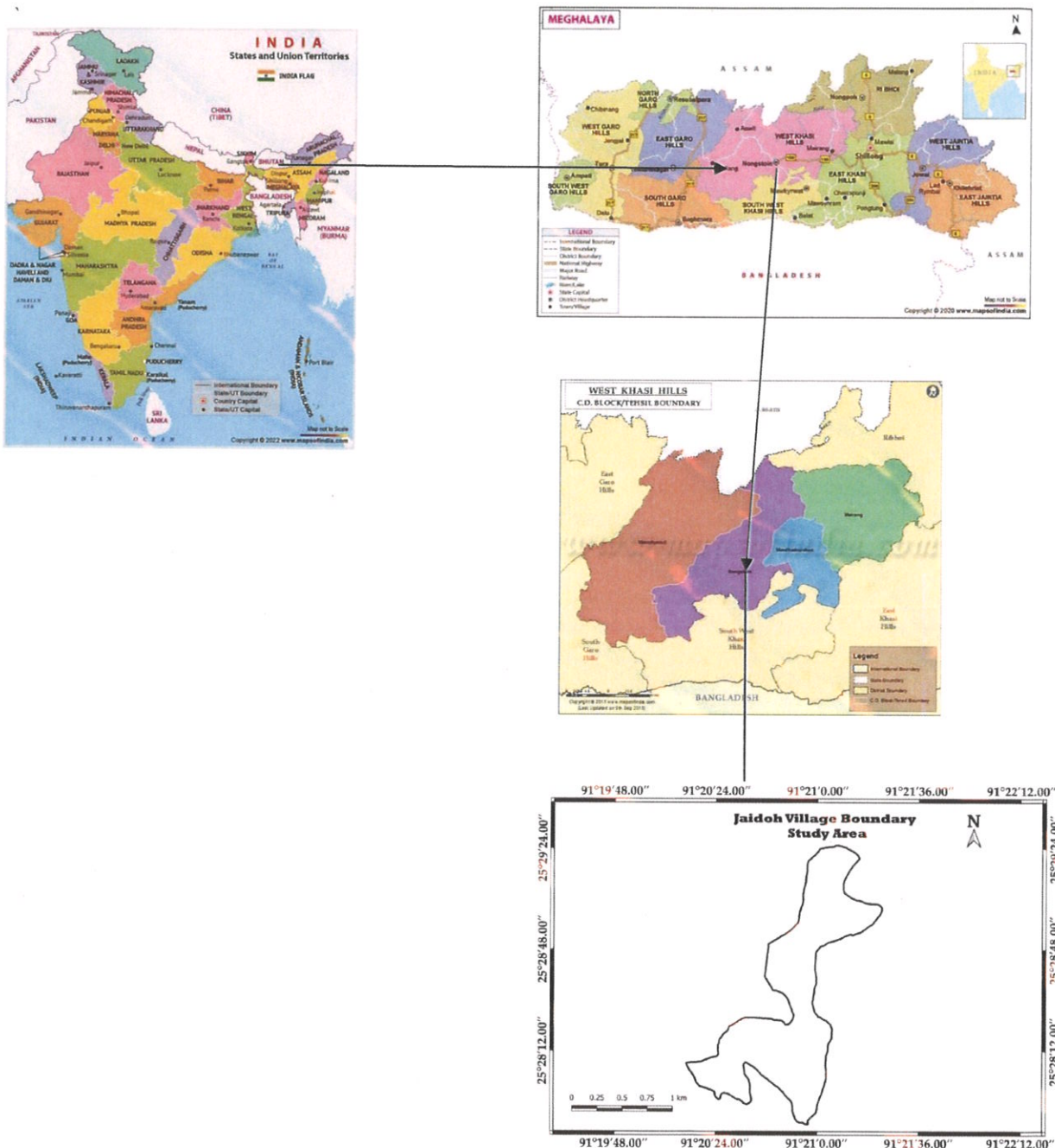
GENERAL OUTLINE OF THE STUDY AREA

2.1 Background of the study area

The Jaidoh Village is located in Nongstoin C&RD Block, West Khasi Hills district, Meghalaya. It has a total number of 130 household with a population of 812, (419 males and 393 female) which account 51.6% male and 48.3% female. The sex ratio of Jaidoh village is 937 female per thousand males which is lower than that of the national level which is about 943 female. The total literacy rate of the study area is about 73.2 %.

2.2 Location

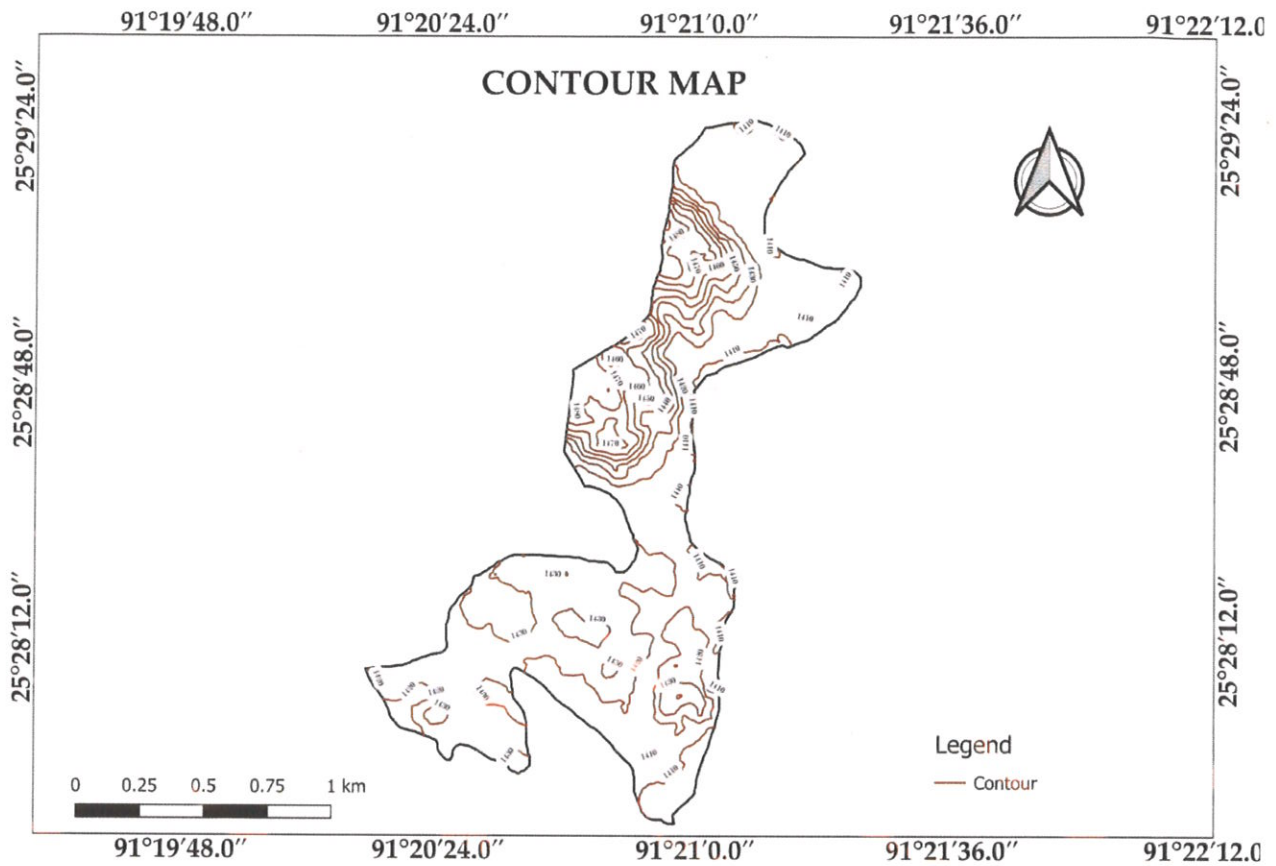
The latitudinal extension of Jaidoh is $25^{\circ}27'45''$ North to $25^{\circ}29'26''$ North and the longitudinal extension is $91^{\circ}20'13''$ East to $91^{\circ}21'23''$ East. It is a part of Nongstoin Block. It is about 12.5 km away from Nongstoin the district headquarter of West Khasi Hills District and 85.3 km away from Shillong which is the Capital of Meghalaya. It is bounded by Nonglwai in the east, Mawthunkper in the West, Nongkynjang in the North and Marshan Nongrim in the South. It covers an area of 1.878 Sq/ Km's. We can further understand with the help of the following map:



Maps 2.1 Location map of Jaidoh

2.3 Relief

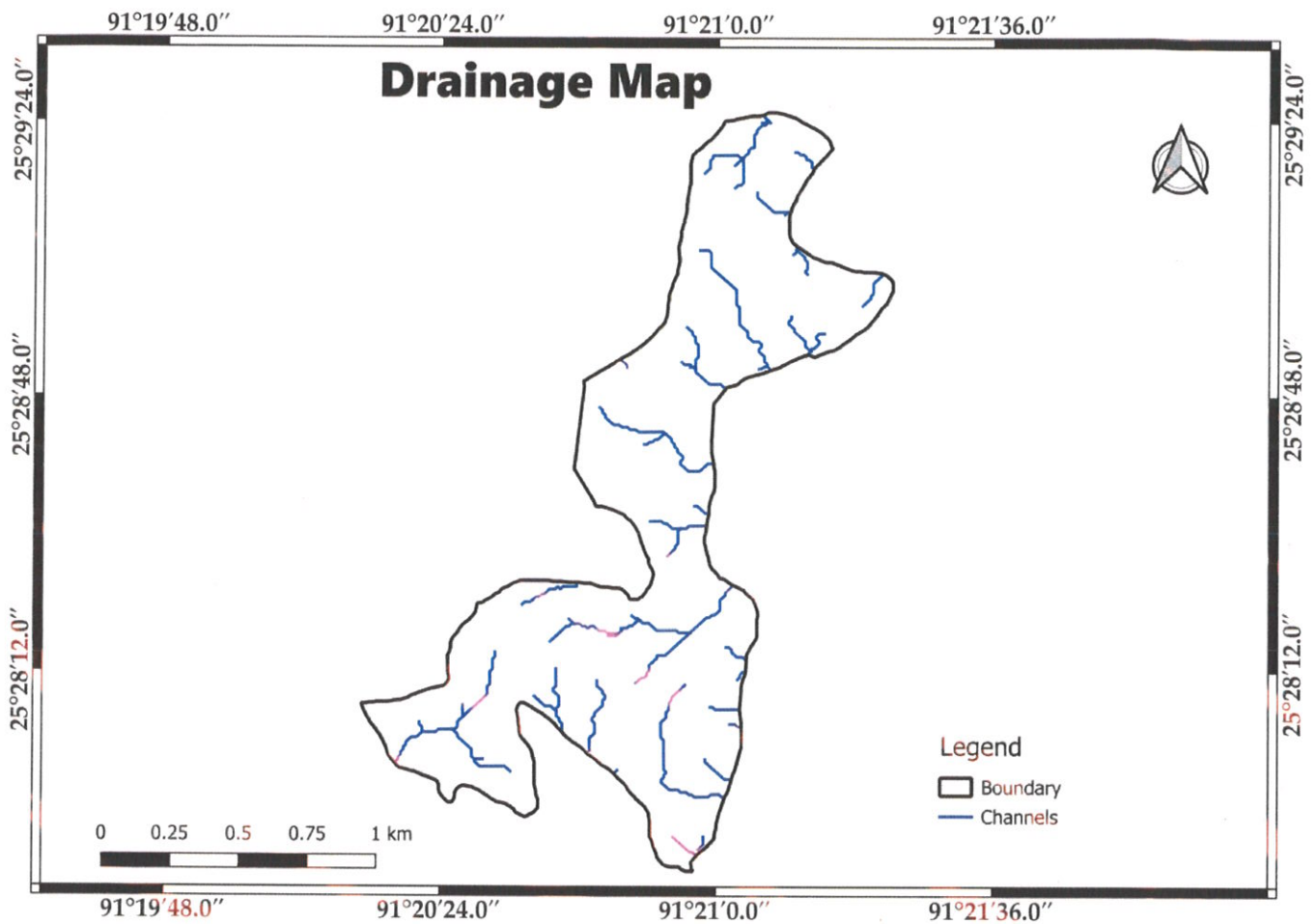
Jaidoh covers mostly with gentle slopes, this covers the North, the north east and the south with height of 1410 meters above sea level to 1430 above sea level. The contour difference in the gentle slope is about 30 meters. Steep slope can be seen only in the north western part with a height of 1430 to 1480 meters above sea level. The lowest elevation of Jaidoh is 1410 meters above sea level and the highest is 1480 meters above sea level .We can further understand with the help of the following map:



Map 2.2: Contour map of Jaidoh

2.4 Drainage

Drainage system is one of the main factors which shape agricultural land use. The main river of the study area is the Kynshi River which is situated in the eastern part of the village. This river goes through from north to south. This river is a perennial river. This river provides water for many purposes, either for agriculture, drinking, and domestic uses or for other purpose. There are many small streams in the village, some of them are perennial streams, and some are non-perennial streams. When we look at the pattern of these streams, they are mostly dendritic pattern, this shows that these rivers go according to the slope of the land. We can further understand with the following map:



Map 2.3 Drainage map of Jaidoh

2.5 Climate

The climatic conditions of the study area are similar to that of the West Khasi Hills District. It experienced four distinct seasons that is, spring, summer, autumn and winter. Its climate is being affected the relief of the region. It experienced a monsoon climate with a warm rainy summer and a cold and dry winter. The average temperature of the coldest month and hottest month is 17°C and 24°C respectively. The region experience low rainfall during winter with 0 mm during December and the highest rainfall is experience during the month of July with 1567.6 mm

Table 2.1: Monthly rainfall of Nongstoin in MM 2020

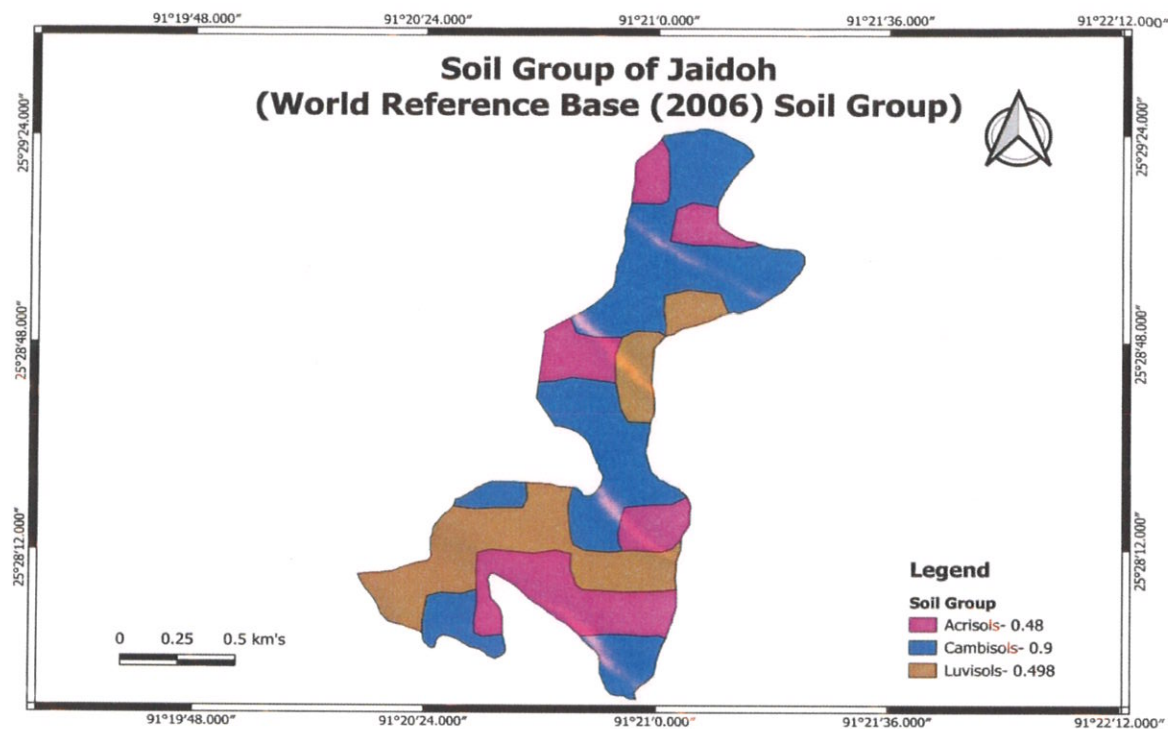
Month	Jan	Feb	March	April	May	June	July	Aug	Sep	Oct	Nov	Dec	Total
Rainfall	14.6	21.1	42.8	258	430.8	877.2	1567.6	401.2	752.8	293.8	11.4	0	4671.3

Source: Directorate of Agriculture Meghalaya

2.8 Natural Vegetation: Natural vegetation of the project area is fairly poor due to tremendous biotics such as recurring fire hazard, timber, fuel wood and charcoal burning etc. The area consists mostly of degraded and open forest with scattered pocket of trees.

2.9 Major Soil Groups:

Soil is an important part of the land as it where settlements, road, etc are built. Soil is very important especially for agriculture, as the types of soils affect the types of crops grown and produced. When we look at the study area, the major soil group is luvisols, cambisols and acrisols. We can understand major soil groups of Jaidoh better with the help of the following map:



Map 2.4 Soil Map of Jaidoh (Source: ISRIC World Soils Information)

Luvisols:

Luvisols is a soil group in Reference Base for Soil Resources. Luvisols are fertile soils and are used for agriculture. Luvisols have an argic horizon and a surface and sub surface of higher clay content. Luvisols is formed as soil is being washed down or eroded downward by water, either by rains or rivers from uphill and are deposited in the downhill. This soil is very good for cultivation.

From the above map, it is seen that Luvisols cover mostly in the Central and the southern part of the area.

Cambisols:

Cambisols is one of the soil group from World Reference Base for Soil Resource. It is a soil which is form in the beginning of soil formation, the horizontal differentiation is weak, mostly brownish discolouration. Cambisols is good for agriculture and is intensively used.

From the map above, It is seen that cambisols covers the most part of the study area. It is found mostly in the north and the central part of the study area, some can also be found in the southern part of the study area.

Acrisols:

Acrisols is one of the groups of soil in World Reference Base for Soil Resources. Acrisols is rich in clay.

From the map acrisols can be found a little in the north, the central and the southern part of the study area.

CHAPTER-3 LAND USE

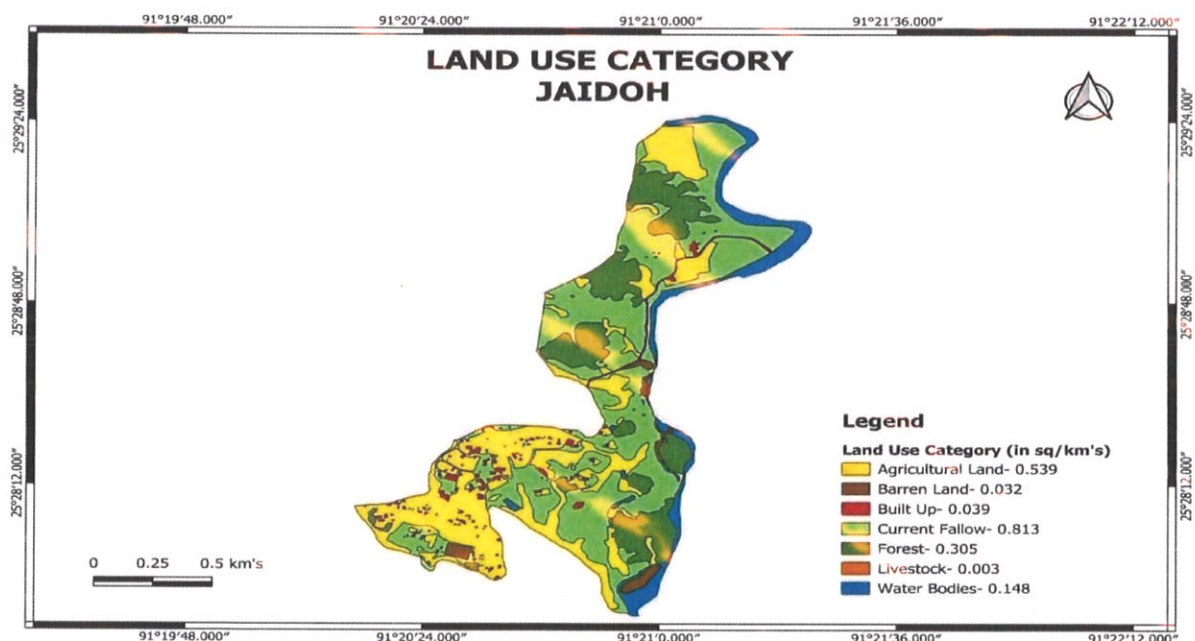
3.1 Introduction:

Land is an important part of the surface of the earth as most activities from agriculture, settlement, industries, etc. take place on land. Therefore, it is important to study about how land is used. Land use is only the use of land for any purpose and activities. With the growth of urbanization, there is a growth in other activities related to urban settlement to cater the need of urban people. With the growth of these activities, there is a change in land use. More and more agricultural land are being converted into settlement, industrial land, roads, etc.

All human depends on agriculture, either directly or indirectly. To some agriculture provide employment, food, income and is also a part of their culture. While to some, agriculture provide them food, resources for industries, products for selling, etc., therefore there is a dependence on agriculture indirectly. Hence agriculture is very important activities, especially for people living in under-developed and developing countries like India where more than 50% of the people still depend on agriculture directly. Because agriculture is very important, Understanding about land use in general and agricultural land use is very important, hence the name of the topic Land use.

3.2 Land use Land cover:

Land can be use for many purposes. It can be use for agriculture, settlements, roads, Industries, Hospitals, Schools, Playing ground, recreational land, etc., Jaidoh is a rural area. It is hilly, with gentle slope; therefore its land use is also similar to many rural area or villages in Meghalaya. Land use Land Cover can be divided in many categories in order to have a proper understanding about it. So in order to have a proper understanding about it, let us look at the following map:



Map 3.1: Land Use Land Cover Map of Jaidoh

From the map, it is seen that the land use category of Jaidoh consists of Agricultural land, barren land, built up, forests, livestock, and water bodies.

We can further understand with the help of the following table and diagram:

Sl. No	Land use Category	Area in Sq. Km's	Land use in %
1.	Agricultural land	0.539	28.700
2.	Current fallow	0.813	43.290
3.	Barren Land	0.032	1.703
4.	Built up	0.039	2.076
5.	Forests	0.305	16.240
6.	livestock	0.003	0.159
7.	Water Bodies	0.148	7.880

Table 3.1: Land use Category of Jaidoh (Source: Field Study)

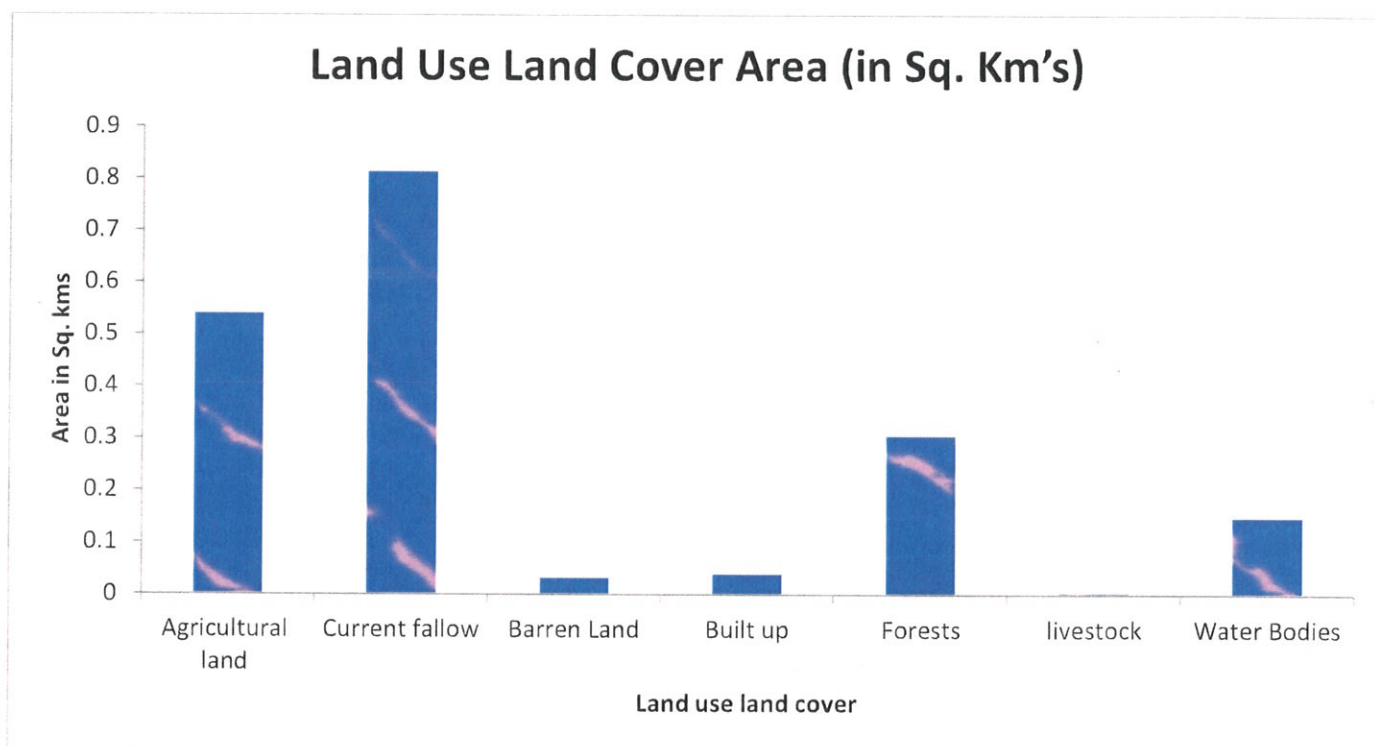


Fig 3.1: Land use Land Cover of Jaidoh

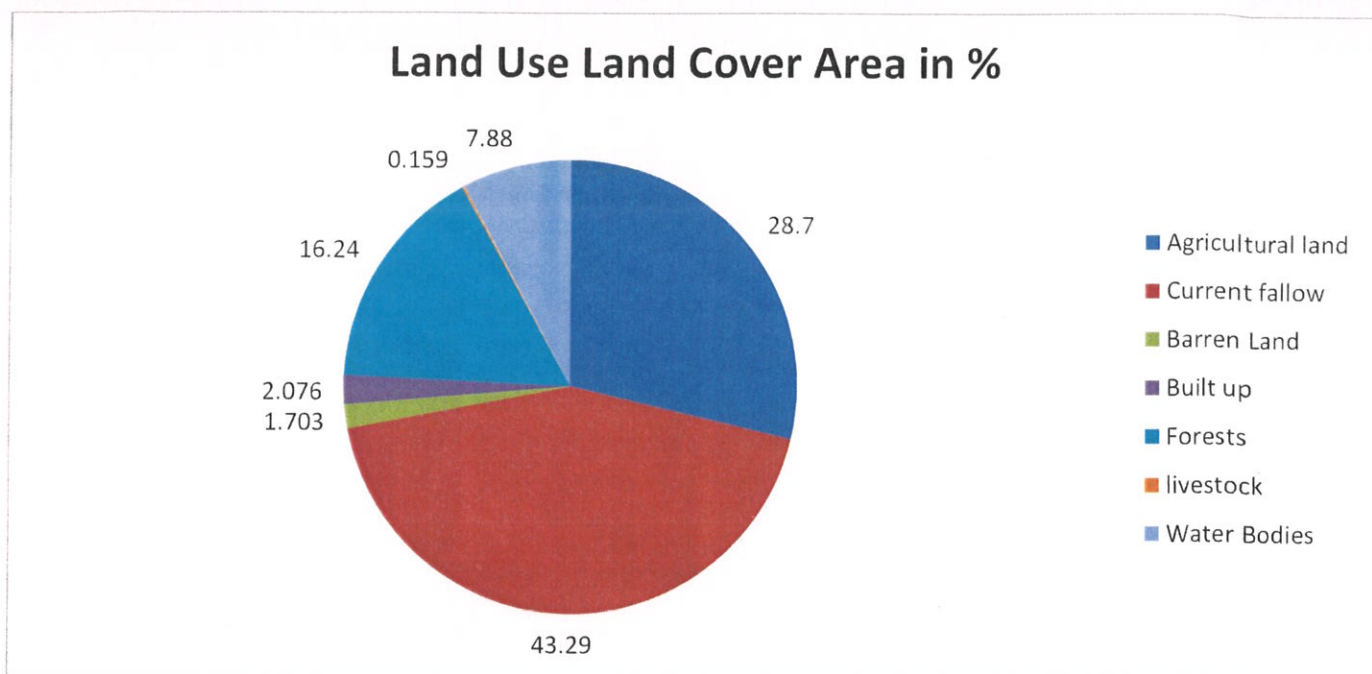


Fig 3.2: Land use Land cover % in Jaidoh

1. **Agricultural land:** Agricultural land is the most important land use in Jaidoh as many people are cultivators. It is that land which is used for the cultivation of crops. It covers an area of 0.539 sq. kms out of the total land of 1.878 sq. kms. The percentage coverage is about 28.7%
2. **Current fallow:** Current fallow lands are those lands left without cultivation for a period less than 1 year. This is done so to give rest to the land when the fertility of the land starts to decrease and to renew its fertility. From the table and diagram it is seen that current fallow cover the most area with 0.813 sq. kms which is about 43.29 % of the total area.
3. **Barren land:** Land which is left without using for anything is called as barren land. From the table and diagram it is seen that in Jaidoh this land covers an area of 0.032 sq. kms which account for about 1.703% of the total land.
4. **Built up:** Built up are those land use for settlements, roads, buildings, etc. from the table and diagram, it is seen that this map covers an area of 0.039 sq.kms which is about 2.076% of the total land in the study area.
5. **Forests:** Forests are of two types, actual forests cover and area classified as forests. In the study area only actual forest cover can be found. From the table and diagram it is seen that this land cover an area of 0.305 sq.kms which is about 16.24% of the total area.

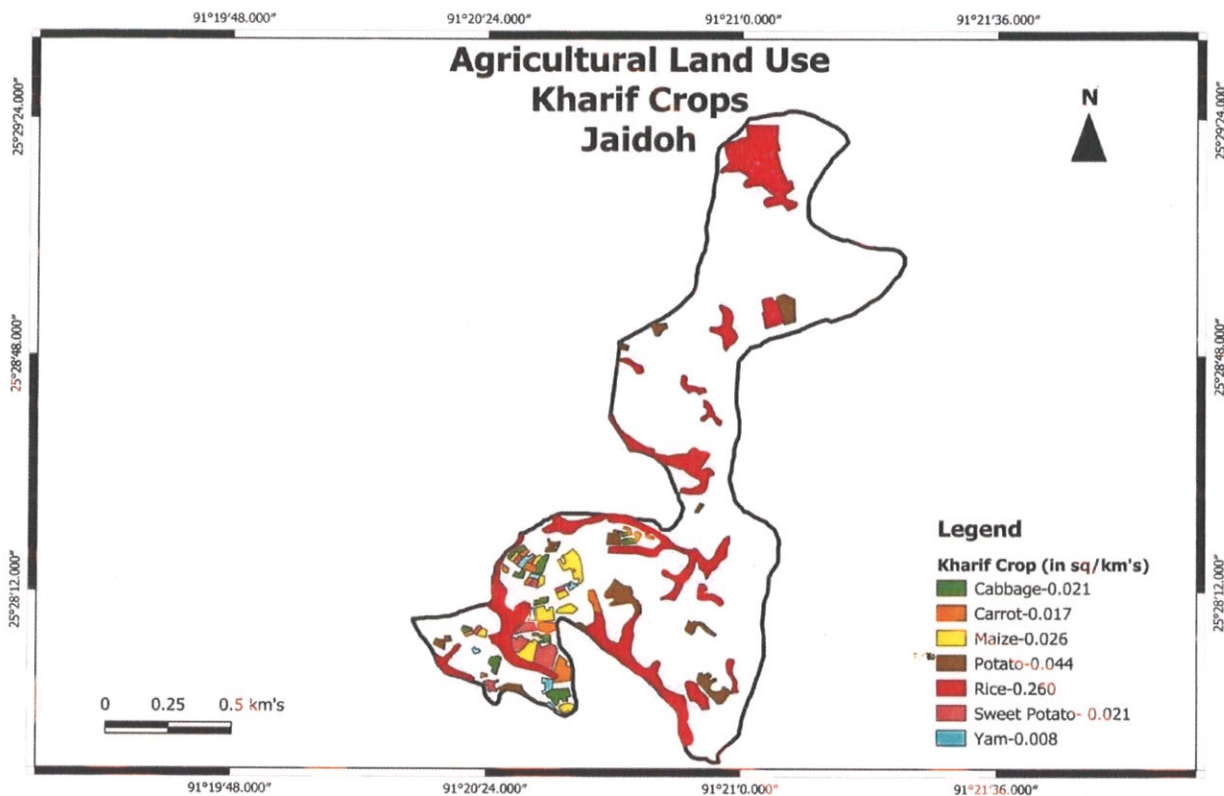
6. **Water bodies:** Water bodies includes rivers, streams, lakes, ponds, etc. from the table and diagram it is seen that this area covers about 0.148 sq.kms which is about 7.88% of the total area.

7. **Livestock:** People in Jaidoh rear livestock animals like hens, goat, pig, cow, bees. People rear around 1000 hens, mostly broiler and some local's hens. Around 69 pigs, 75 cows, 39 goats are reared in Jaidoh. Most of these animals are reared for selling in the market and also for own consumption. The area for livestock cover about 0.159 sq. km's and this is about 0.111% of the total area.

3.3 Area under Kharif Crops:

Kharif is a summer cropping seasons which starts right from the onset of monsoons that is from the month of June till the beginning of winter that is in the month of October. Kharif crops are crops grown during kharif seasons or during summer. The total Kharif crops grown area in Jaidoh is 0.397 sq.kms.

Crops grown in Jaidoh is similar to crops grown all over Meghalaya, especially that of the khasi hills. Most of the crops grown here are food crops, only some are commercial crops. Rice, potato, carrots, cabbage, etc are some of the major crops grown during this season in this area. We can further understand with the help of the following map:



Map 3.2: Agricultural Land use Kharif Crops of Jaidoh

From the map above, it is seen that there are 7 major crops grown here, that is rice, potato, sweet potato, cabbage, carrot, maize, and yam. These crops are grown in the surrounding of Jaidoh. If we look at the map, it is seen that only some area is use for cultivation because most of the land are left fallow for soil to regain its fertility. The major crops grown in this area can be studied with the help of the following table and diagrams:

Table 3.2: Area and Percentage Coverage of Kharif Crops of Jaidoh (Source: Field Survey)

Sl. No	Crops	Area (in sq. km's)	Area coverage in %
1.	Cabbage	0.021	5.28
2.	Carrot	0.017	4.28
3.	Maize	0.026	6.54
4.	Potato	0.044	11.08
5.	Rice	0.260	65.49
6.	Sweet potato	0.021	5.28
7.	Yam	0.008	2.015

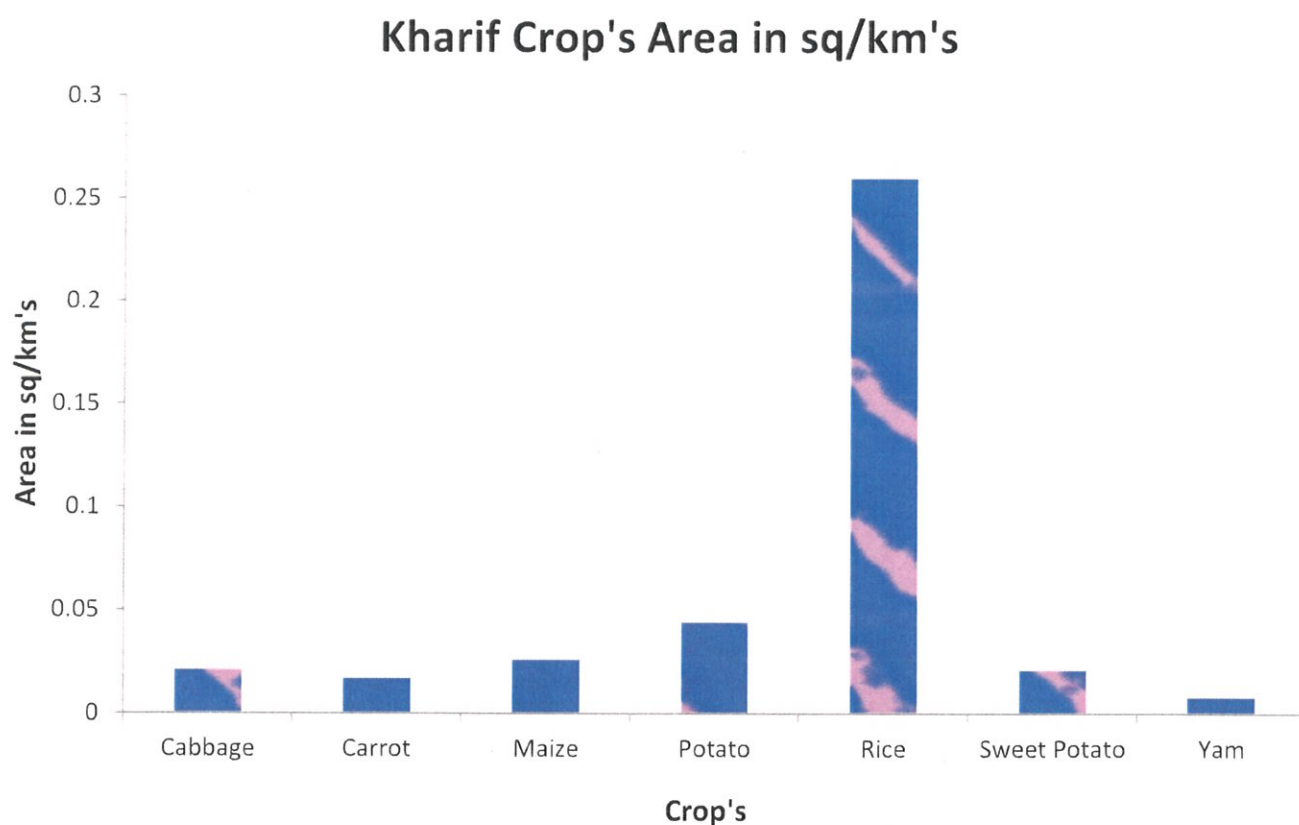


Fig 3.3 Area Coverage of Kharif Crops

Kharif Crop's Area in %

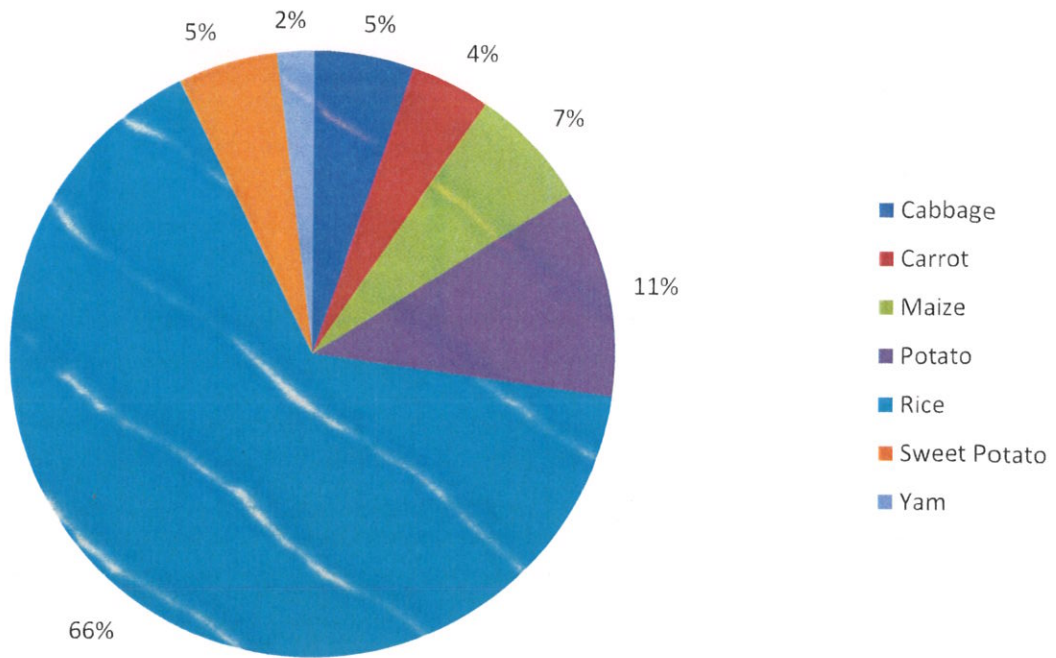


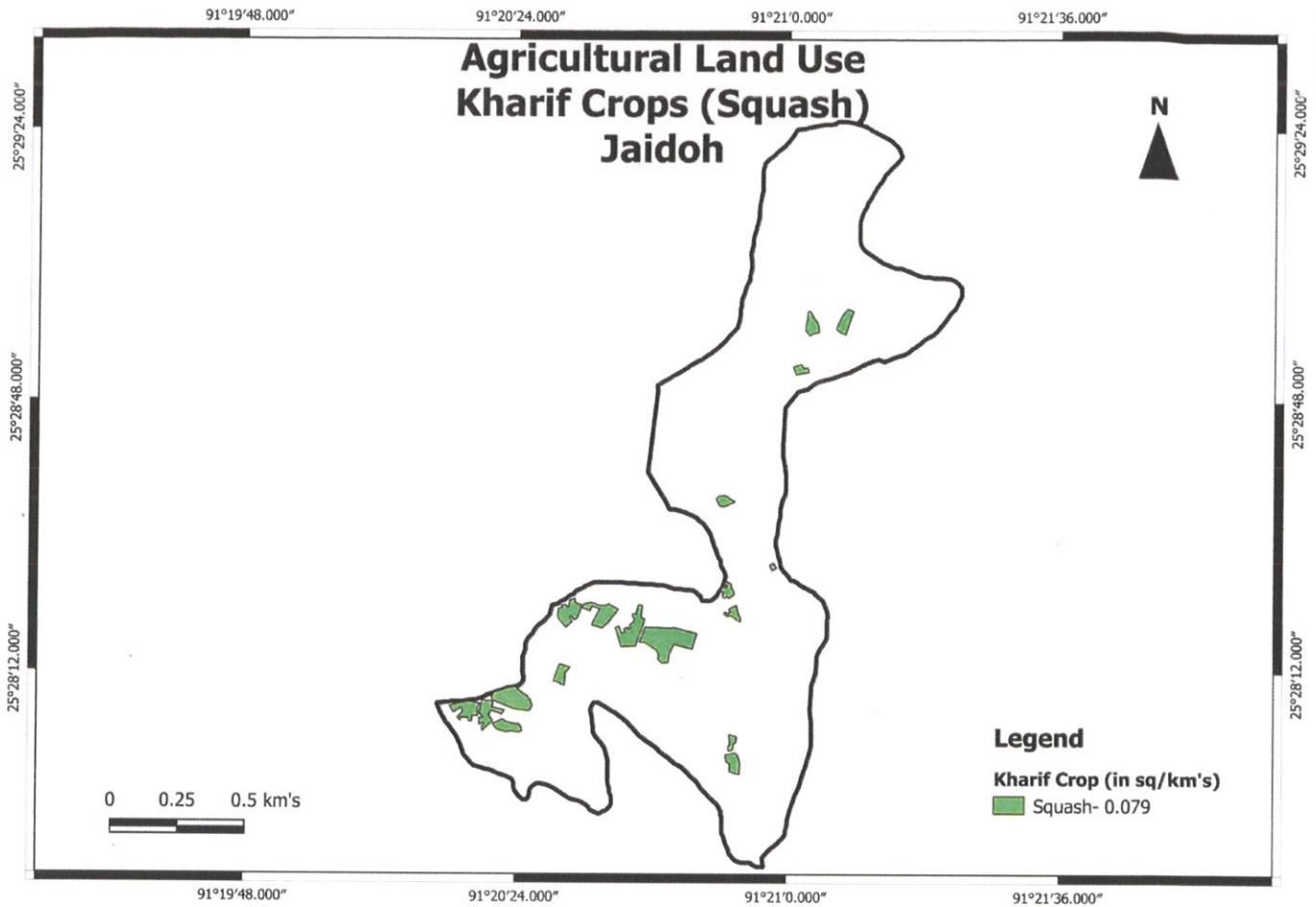
Fig 3.4: Percentage Coverage of Kharif Crops

From the table and diagram, out of the total Kharif crops grown area of 0.397 sq.kms

- Rice is the most dominant crops with 0.260 sq. kms which account of about 64.49% of the total crops area. Rice is a staple food in the study area and people grow rice mostly for their consumption and some surplus is sold in the market.
- Potato is the second most grown crops in the study area. This potato is a mid-season potato which is different from winter potato. Potato growing area covers about 0.044sq. Km's with an area percentage of 11.08% out of the total cropped area.
- Maize is another crop grown here. The total area for the cultivation of maize is 0.026sq.kms which is about 6.54% of the total kharif cropped area.
- Sweet potato and cabbage are other crops grown here. They each covers an area of 0.021 sq. km's which is about 5.28% of the total cropped area.
- Carrot cropped area is about 0.017 sq.kms which is about 4.28%. yam is another crop which occupy around 0.008 sq.kms which is 2.015% of the total kharif crop area. Other minor crops grown here include mustard, cauliflower, tomato, etc.
- Most of the crops grown here, farmers used them for their own consumption but surplus is being sold in the market.

- *Squash* is the only crop which is grown mostly for commercial purpose that is for selling in the market.

We can understand better with the help of the following map:

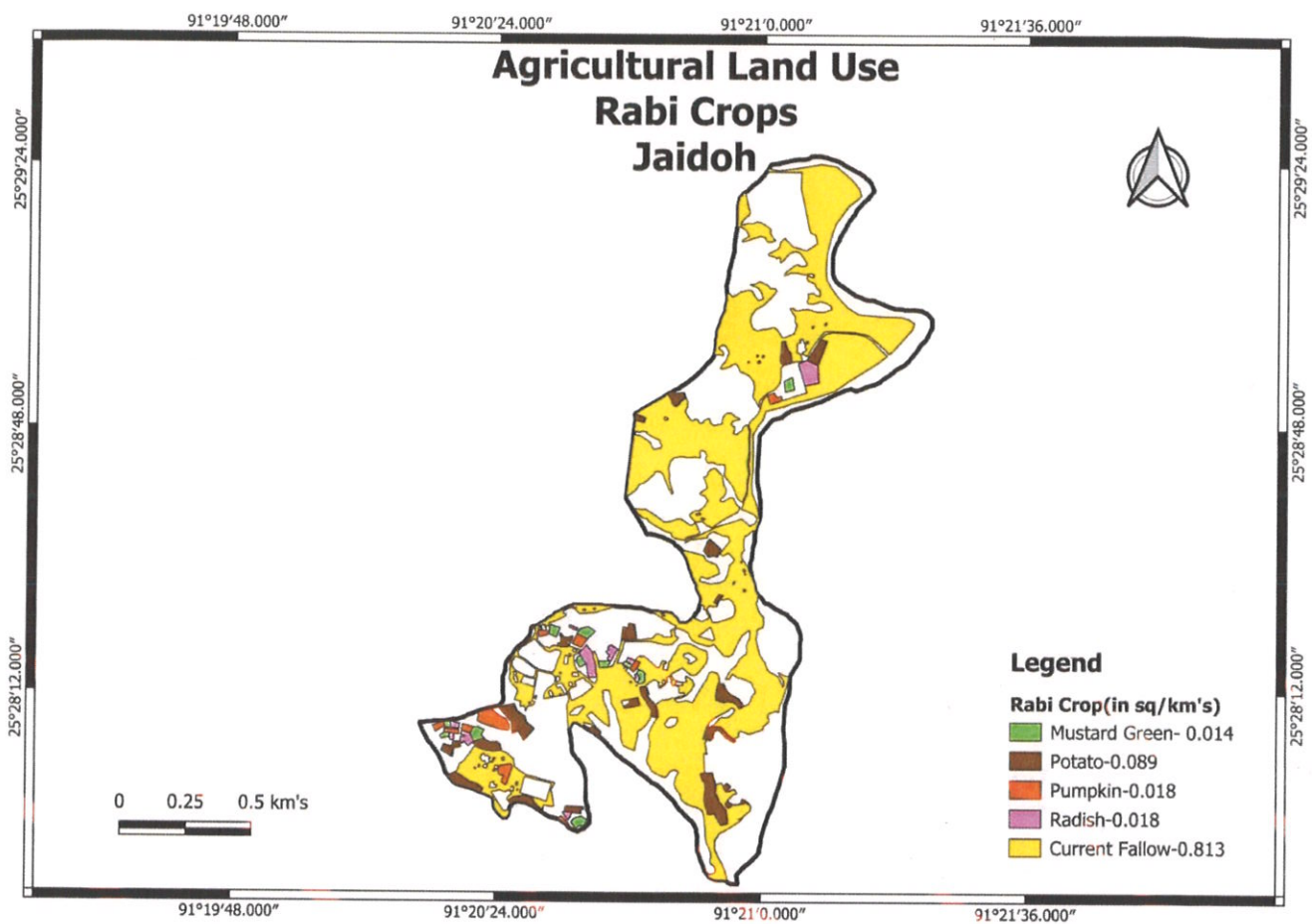


Map 3.3: Agricultural Land use Kharif Crops (Squash) of Jaidoh

From the above map we can see that Squash cropped area occupy about 0.079 sq.kms. It is grown mostly in the southern part of Jaidoh, but it can be seen that it is grown all over Jaidoh. It is sold in the nearby market like Nongstoin and the other market.

3.4 Area under Rabi Crops:

Another cropping season is Rabi Season. Crops grown this season are rabi crops. This is a season which starts in the beginning of winter season from November till the start or beginning of summer season that is march. During this season very less crops are grown compare to Kharif season, this is due to cold and dry climate. Crops which are prone to frost cannot be grown in this season as frost is very high during winter in Jaidoh. The Rabi cropping area in Jaidoh is about 0.139 Sq. Km's in area. Most of the land are left fallow during this season. There are four major crops grown during rabi season in the study area they are Mustard, potato, pumpkin, radish. We can further understand Rabi crop area, the distribution of crops with the help of the following maps:



Map 3.4: Agricultural Land use Rabi Crops of Jaidoh

Like all village in Khasi, potato is the most dominant crop in this area during rabi season, this crop during rabi season is grown mostly in the southern part of Jaidoh. Pumpkin, Radish and mustard are grown in some part of Jaidoh. We can further understand with the help of the following table and diagrams:

Sl. No	Crops	Area in Sq. Km	Area coverage in %
1.	Potato	0.089	64.02
2.	Mustard	0.014	10.07
3.	pumpkin	0.018	12.94
4.	Radish	0.018	12.94

Table 3.3: Area and percentage coverage of Rabi crops in Jaidoh (Source: Field Survery)

Rabi Crops Area in Sq.kms

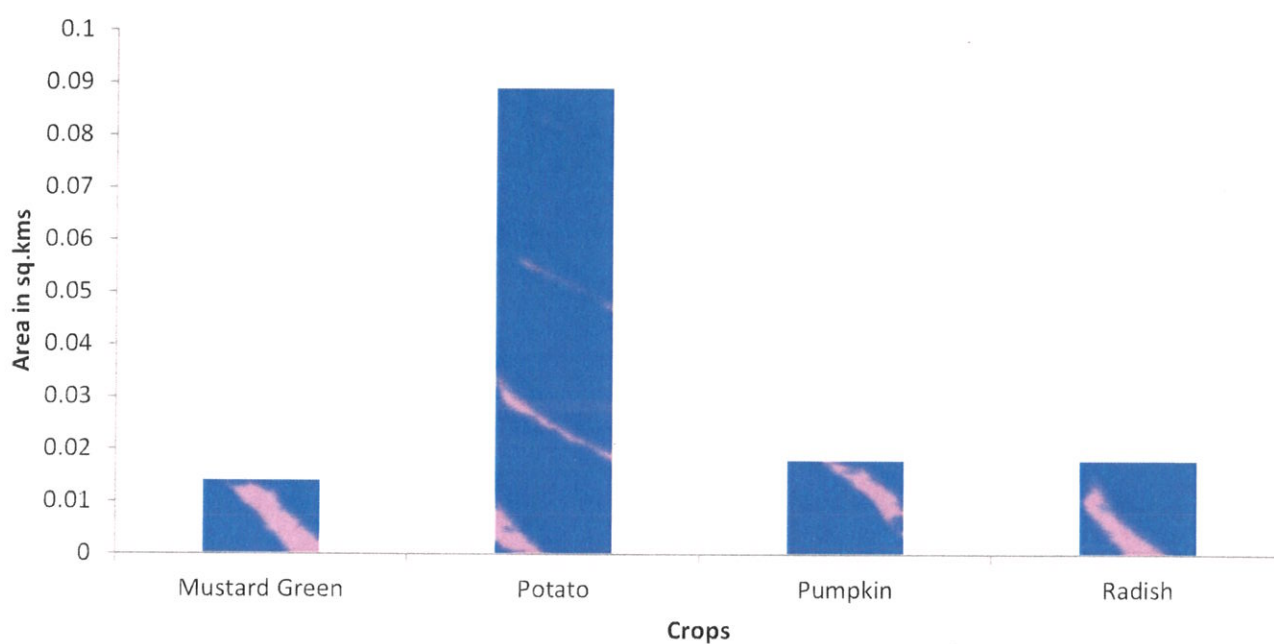


Fig 3.5: Area coverage of rabi crops

Rabi Crops Area in %

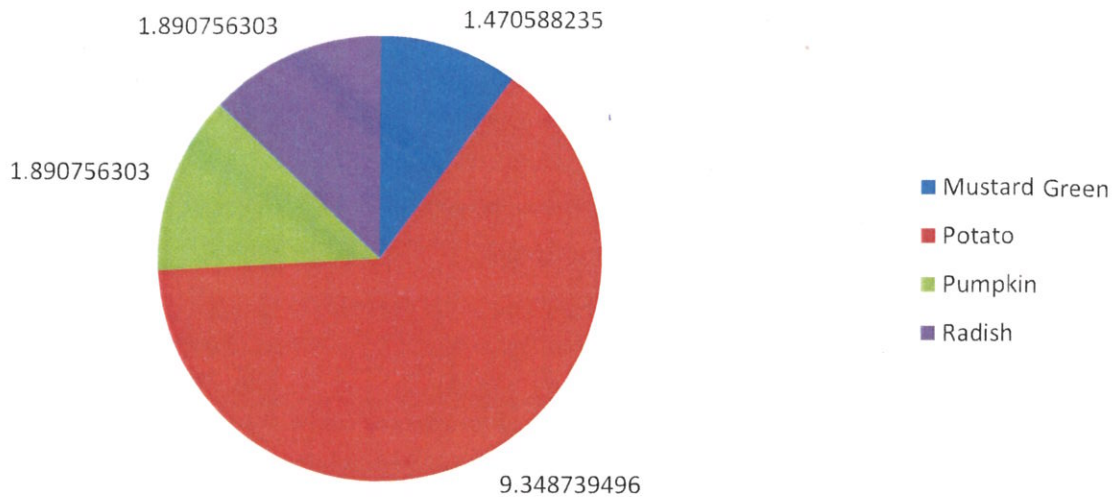
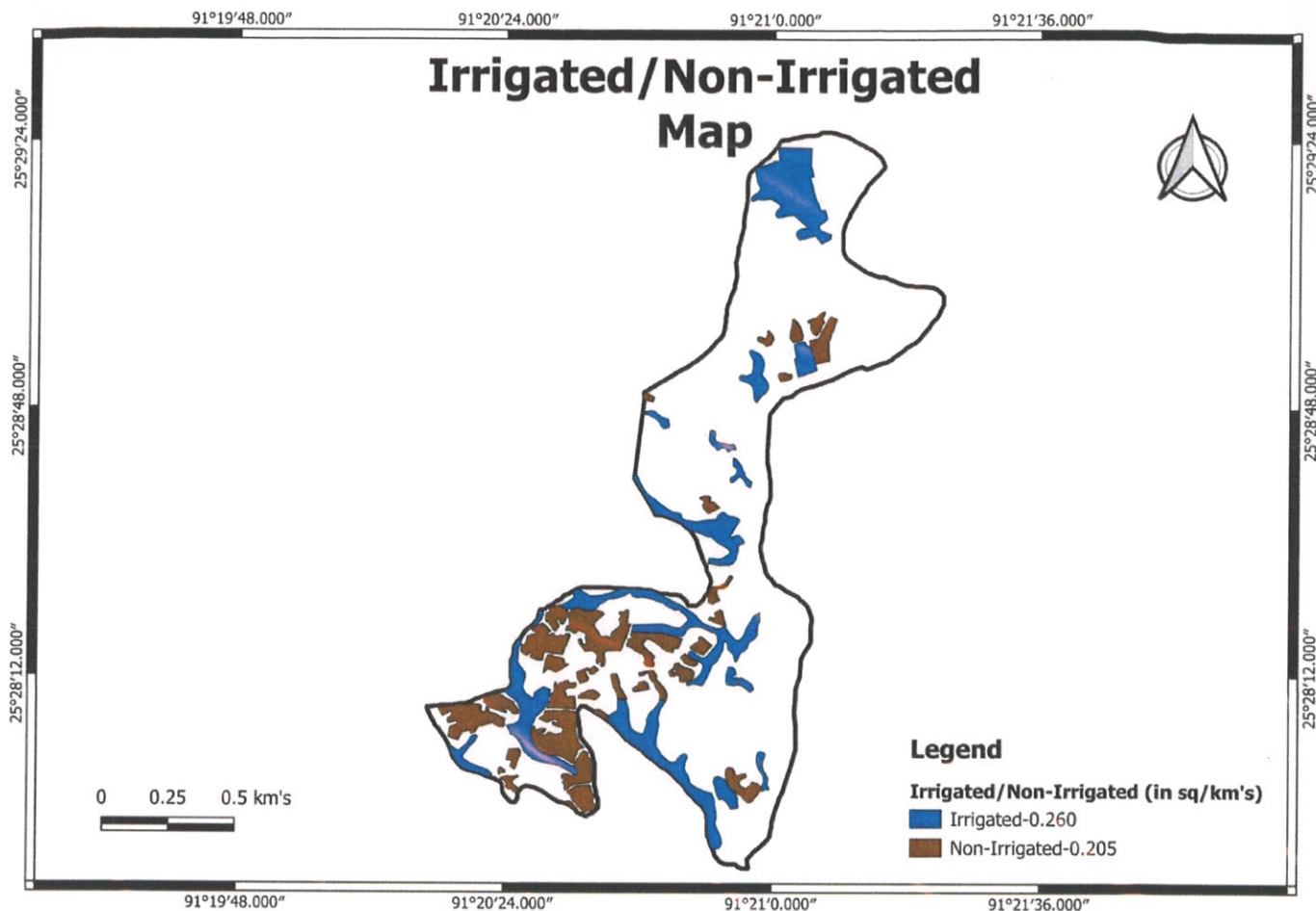


Fig 3.6: Percentage Coverage of Rabi crops

From the diagram above, it is seen that potato covers the most area with 0.089 Sq.Km's which is around 64.02%. While Pumpkin and radish each covers an area of 0.018 Sq. Km's which about 12.94%. Mustard covers an area of 0.014 Sq. Km's which is about 10.07% of the total cropped area.

3.5 Irrigated and Non-irrigated Area:

Irrigation is a practice where a control amount of water is being provided to an agricultural field for a better supply of water to crops and also for a better production of crops. In Jaidoh some land are irrigated and some land irrigation is not practice. Irrigation here is mostly traditional irrigation system. We can further understand with the help of the following map:



Map:3.5 Irrigated and Non-irrigated Area of Jaidoh.

From the above map, it is seen that most of the land in which rice is grown, irrigation is also practice. This is because rice is a crop which require plenty of water While in lands where other crops are grown are not irrigated land. We can further understand with the help of the following table and diagrams:

. Table 3.4: Irrigated and Non-Irrigated land

Name	Area in sq/km's	Area coverage in %
Irrigated	0.260	55.91397849
Non-Irrigated	0.205	44.08602151

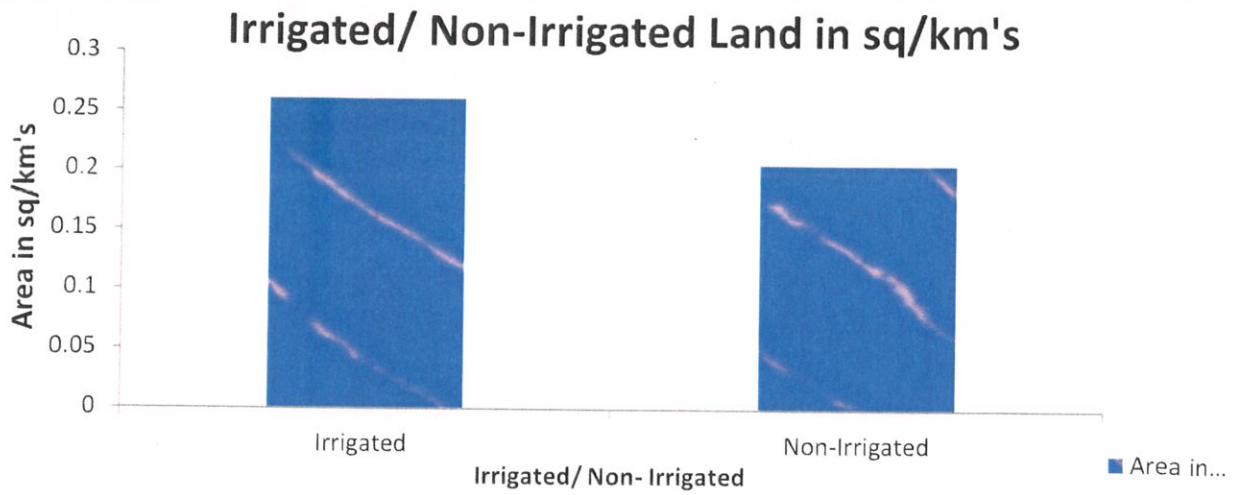


Fig3.7: Irrigated and Non-Irrigated land.

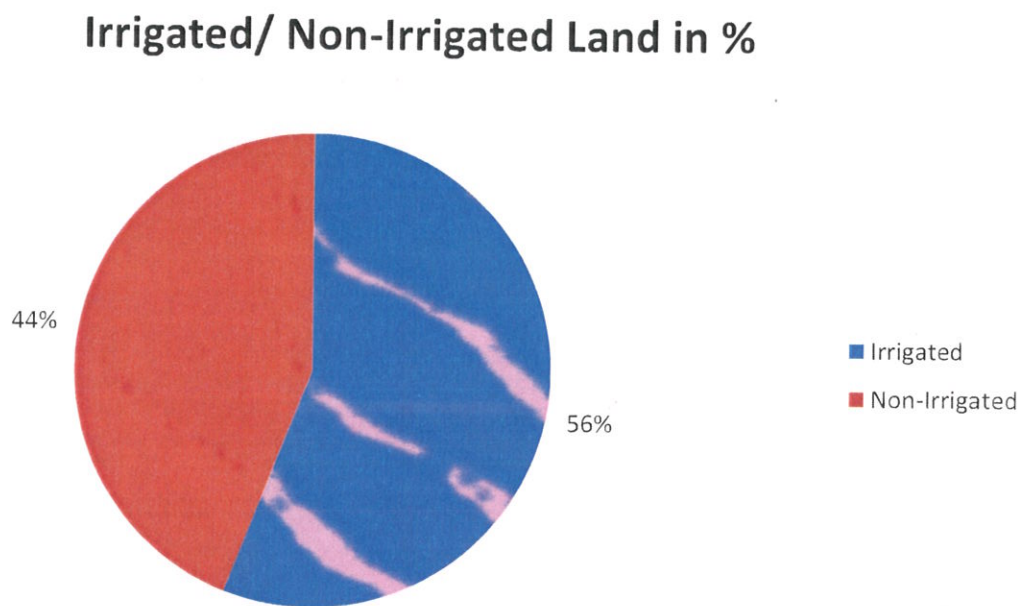


Fig3.8: Irrigated and Non-irrigated area in %

From the above table and diagrams, it is seen that irrigated area covers about 0.260 sq.kms which is about 55.913%, while non-irrigate land covers an area of 0.205 sq.kms which is about 44.086%. This shows that the irrigated and non-irrigated land are almost equal in term of area.

3.6 Agricultural problems:

Jaidoh face many agricultural problems. These can be discussed as follows:

- 1. Old method of cultivation:** Agriculture in Jaidoh is still a primitive types. People still practice intensive subsistence agriculture. This method of cultivation is a very old method in which farmer still work mostly by themselves with some machine like tractor. Most farmers still grow crops only for their own consumption and only some crop like squash and some surplus of other crops are sold in the market.
- 2. Old tools of cultivation:** Most of the tools used by farmers in the study area are very old tools like spade, knife, bamboo cone basket, etc., very less or no machine is used. The seeds used for growing of crops are also mostly traditional seed which is produce less products. All of these are setbacks to the production of different crops and to agriculture as a whole.
- 1. Traditional method of irrigation:** In Jaidoh irrigation is available but it is a traditional method of irrigation in this method of irrigation the river Umyiap is used as a supplier of water. This method of irrigation still depends mostly on rain for supply of water. If rain is abundance, irrigation is good, but rain sometimes can be unreliable. In Nongrangoi Umyiap there is no irrigation facility. This has effect the crops as many crop need lots of water.
- 1. Fragmentation of land holding:** Land is fragmented. Small land are being divided into much smaller land for the family members. This has made cultivation becomes difficult for the use of machine and other new method of cultivation. With fragmentation of land, production per person also becomes low.
- 2. No proper planning on land use land cover:** There is no planning or project for proper land use land cover as of now. Settlements, roads, etc are being build anywhere without proper planning. Many lands are left unused. If these land are used optimally with proper plan people would have benefit a lot.

CHAPTER-4 SUGGESTIONS

Land use is very important as it determine whether an area is a rural area or urban area, it help in proper planning. How man use land also affect climate, biodiversity and the whole ecosystem. How we use land for agriculture can determined the productivity of an area, dependency of the people, types of employment and rate of unemployment. Therefore it is very important to use it properly. When we look at Nongrangoi Umyiap, land is not properly used; some of the suggestion to improve land use is as follows:

1. **Optimum utilization of land:** When we look at Jaidoh, there are a lot of Barren land. This land is suitable for cultivation but is not used and left barren. It is veryimportant to use all these land for any purpose; it may not be for agriculture but for any other purpose. Some land is also left fallow during some months and seasons. Using these land can help to increase crop production, which in turn led people to become independent without depending on other people for food and other crops. This can also solve unemployment, because if more land is being use, more people will have to work, so this provide employment to people live in this village.
2. **Research:** A proper research about land use land cover, especially agricultural land use should betaken to have a proper understanding about land use land cover, so that necessary action can be taken to improve and to optimize the using of land.
3. **Proper planning:** Planning about house building, road building, school building etc., is essential for optimum utilization of land and also to improve the environment, its diversity. Village committee and government should take have a proper rural planning and should take steps to improve land use for a better and sustainable future.
4. **Agricultural Land use Planning (ALUP):** Some lands are left fallow during some months and seasons. Agricultural land use planning with proper study about soil and climate can help to optimize the use of these fallow lands. Agricultural land use planning can also help in maximum utilization of agricultural land, maximum production of crops without degrading the environmentand also help in sustainability of land.
5. **Land use land cover project:** After A research and a proper planning for land use. Village committee and local government should have a project to implement the plans for a proper land use land cover.

6. **Awareness programmed:** People should be educate with proper knowledge through awareness programmed about land use, its changes, effect on the environment, planning, agriculture, types of crops depending on the type of soils and type of climate for optimum utilization of land, especially for agriculture.

7. **Improve agriculture as a whole:** People in the study area should try to improve agriculture in many ways such as method of cultivation. In the study area the types of agriculture is intensive subsistence agriculture which is a very old and traditional method of cultivation. This method needs to be improving by adopting different method such as extensive commercial farming. Most people also still used old and traditional tools for agriculture such as spade, knife, use of tractors, harvesters, etc is very less. People need to improve this also. Land is also divided into fragment, these problems need to be solve by clubbing all the land together in order to produce more crops and to get more products.

CHAPTER -5 FINDINGS AND CONCLUSION

5.1 Findings:

The previous chapters have shed many valuable information about jaidoh and its land use land cover as a whole.

From the study area it is found out that the relief, climate, soils, and other physical features of Jaidoh is similar to that of Khasi hills since it is a part of West Khasi Hills.

Most of the people in Jaidoh are very hospitable. They are very friendly, kind and welcoming.

It is understood that most people are farmers who depend their livelihood mostly on agriculture. Nearly all household involve in farming or agriculture. Agriculture is their main occupation, it is also a part of their culture. It has shape their live, their way of living, how they eat, how they work, all of these have define the people of Jaidoh.

Sine agriculture is their main occupation, land is very important, as agriculture take place on land. On the study area it is found that most land are used for agriculture. Out of the total area of 2.18 Sq. km's, net sown area covers an area of 0.539 sq. Km's which is around 28.7 % of the total land, this show that most land use in Jaidoh is Agricultural land use.

Agriculture in Jaidoh is mostly of two seasons, kharif and rabi, which is summer season and winter season. It is found out that most crops are grown during kharif season. Crops like rice which is the main cereal and a staple food for the people in the study area, Sweet potato, summer potato or mid season potato, carrot, cabbage, mustard, etc are the main crops grown during this season. Rice is the most dominant food crop grown during this season. In the study area it occupy about 0.260 Sq. Km's which is about 65.49% of the total agricultural land in the study area. Squash is one of the crops which are grown for selling.

Rabi season is another cropping season in the study area. It is found that there are four main crops in the study area during this season that is potato, mustard, pumpkin and radish. Potato is the major crops during this season.

In terms of irrigation, it is found out that more that 50% of the land is irrigated land and in rice is the main crops grown in irrigated land as it requires lot of water. The types of irrigation practice here is also traditional irrigation.

According to study many valuable information, problems has been found about agriculture and its land use, many steps are needed to be taken in order to solve these problems.

5.2 Conclusions:

To conclude, through this project, many valuable information and about the study area, especially regarding agriculture has been found which are very important for understanding about land use especially regarding agricultural land use.

This project has provided many information about different seasons and different crops grown during these seasons. Understanding this can help us to grow different crops properly according to seasons because different crops require different temperature and different volume of water. Some problem is also found regarding land use. Land are not used up to its potential, many culturable land are being wasted, these land if use properly can provide a lot of advantages to the village, It can provide jobs, more products, and can improve people's livelihood in the study area alot. Another problem found in this project is that the method of cultivation such as irrigation, tools, and methods are traditional method which has hindered the agricultural potentialof the study area. This project has help a lot in understanding these problems and suggestions are provide to improve agriculture and its land use.

This project has also provided information about how agriculture is connected to economic prosperity. How land can be use properly to increase employment and also bring about economic prosperity

Therefore these types of project should be encouraged so that students can have ideas about chosen topics and also to develop and exercise our thinking abilities. This project can also provide experiences regarding field survey, steps about writing and many more.

LIST OF PLATES

Plate.1- Students interviewing locals 1

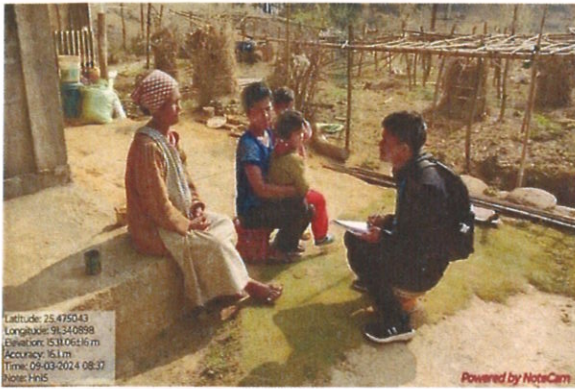


Plate.2- Pig sty



Plate.3- Students interviewing locals 2

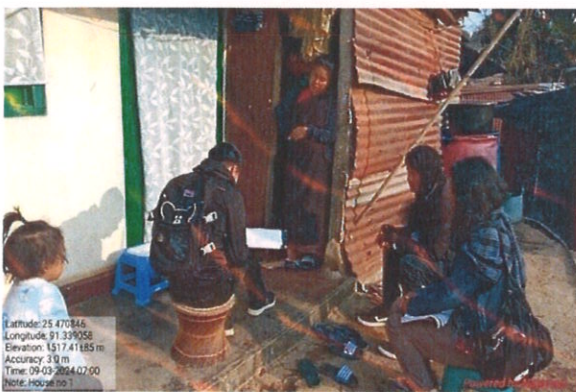


Plate.4- Squash Plantation



Plate.5- Students interview locals 3



Plate.6- A farm



Plate.7- Students interviewing locals 4



Plate.8- A Paddy field



Plate.9- Students along with teacher's \ in Jaidoh Village.



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