পঞ্জীভুক্ত নম্বৰ - ৭৬৮ /৯৭ Registered No.-768/97

অসম ৰাজপত্ৰ

সত্যমেব জয়তে

THE ASSAM GAZETTE

অসাধাৰণ

EXTRAORDINARY

প্ৰাপ্ত কৰ্ত্তৃত্বৰ দ্বাৰা প্ৰকাশিত

PUBLISHED BY THE AUTHORITY

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No. 475 Dispur, Thursday, 29th October, 2020, 7th Kartika, 1942 (S. E.)

GOVERNMENT OF ASSAM

ORDERS BY THE GOVERNOR

ANIMAL HUSBANDRY AND VETERINARY DEPARTMENT

NOTIFICATION

The 6th December, 2019

No. VFV.234/2019/Pt-IV/59.- The Governor of Assam is pleased to notify the Policy for "Assam Goat Breeding Policy, 2019" for improvement of the genetic potentiality of the goat population through selection and straight/pure breeding through Artificial Insemination (AI) or natural service in the state.

The "Assam Goat Breeding Policy, 2019" is enclosed at **Annexure-I** and hosted on website URL (https:// animalhusbandry.assam.gov.in)

This policy shall come into force with effect from the date of the publication in the Official Gazette.

1. Introduction :

Assam with a land area of 78438 sq. km. is home to a population of 31.2 million out of which 31.98% live below the poverty line. The people of Assam are mostly non-vegetarian and as a result the demand of meat and meat products in the state is very high. Under this context, goat occupies a unique position in the animal husbandry scenario of Assam.

Goat rearing is an age-old avocation of the rural farmers and it is primarily managed by women folk. Unlike other meat producing animals, the goat meat is eaten by all sections of the society irrespective of caste and religion. Therefore, a little bit of scientific support would help in providing livelihood security to the farmers through goat husbandry.

The goats of Assam, hither to be called as Assam Hill Goat (AHG) are commonly found in the plains of the Brahmaputra and Barak valley and in the hilly tract of Dima Hasao and Karbi Anglong. These goats are predominantly of meat type producing good quality meat. Their body size is smaller than many other goat breeds of the country. Assam Hill goats are well known for their high prolificacy, fertility and fecundity coupled with high percentage of twinning and even triplet or quadruplet kiddings.

The coat colours of the animals are either white, brown, black, grey or black and white. Ears are generally erect and horns are curved backward. Most of the animals are bearded and sometimes with long hair on their body coat.

2. Climatic condition of Assam

The climate of Assam is typically "tropical monsoon rainfall" type with high level of humidity and heavy rainfall. Assam has a moderate climate all throughout the year, with warm summers and mild winters. In the monsoon season, the whole state comes alive with the beauty of nature. However, climate variations within the state can be seen regionally. Climatic condition and geo-topographical information of all the districts as well as meteorological data of different agro-climatic zones of Assam are given as under:

CLIMATIC CONDITION OF DIFFERENT DISTRICTS OF ASSAM		
1.	KOKRAJHAR	During monsoon it receives an average rainfall of 248 mm, while in the post monsoon season 280 mm. The maximum and minimum temperatures in the district are 38°C and 10°C respectively.
2.	DHUBRI	The annual average rainfall of the district is 2647, mm. The maximum and minimum temperature of the district is 38°C and 7°C respectively.
3.	GOALPARA	The maximum temperature rises up to 33° C during July and August but the minimum temperature falls up to 7° C in January. The average annual rainfall in the district is 1614 mm.
4.	CHIRANG	It enjoys sub-tropical climate with hot and humid summer followed by cold winter. The average annual rainfall of the place is about 1900 mm per annum. It receives maximum rainfall during the months of June and September. The maximum temperature of the place varies from 33degree Celsius to 38 degree Celsius and the minimum temperature varies from 9 to 10 degree Celsius.
5.	BONGAIGAON	The maximum temperature rises up to 33° C during July and August but the minimum temperature falls up to 7° C in January.
6.	BARPETA	The area receives an average rainfall of 1409 mm. The maximum and minimum temperatures recorded for the district are 35°C and 7°C respectively.
7.	BAKSA	The district enjoys a sub-tropical humid climate with a hot summer and moderate winter. January is the coldest month and July/August is the warmest month. The winter temperature drops to 10°C and summer temperature goes up to 35°C. South-West monsoon activates from June and continues up to September-October. The average annual rainfall of the district is 2,971.6 mm.
8.	KAMRUP (Metro & Rural)	The average rainfall is 2124 mm. The maximum and minimum temperatures recorded in the district are 35°C and 6°C respectively.
9.	NALBARI	The maximum and minimum temperatures are 35°C and 6°C respectively. The normal rainfall in the district is 2685.5 mm.

10.	DARRANG	The average annual rainfall recorded is 1477.72 mm. The maximum temperature recorded is 35.6°C in the month of July-August and the minimum is 6°C in the months of December - January.
11.	UDALGURI	The district has a sub-tropical humid climate with semi-dry hot summer and cold winter. Agro-climatically, the district falls under the North Bank Plain Zone. During summer (May to Early September), heavy rainfall occurs due to south-west monsoon for which the district experiences flood. It is observed that the district receives an average annual rainfall (normal) of about 2,000 mm and the temperature varies between Max 34.50°C and Min 13.50°C.Relative humidity ranges between 82%&88%.
12.	MORIGAON	The normal rainfall in the district is 2000 mm. The average minimum and maximum temperatures are 8° C (in January) and 34.3° C (during July/August) respectively.
13.	NAGAON	The normal average rainfall in the district is 2000 mm. The average minimum and maximum temperatures is 8° C in January and about 34.3° C in July/August.
14.	SONITPUR	The average annual rainfall is 1563 mm. The maximum temperature recorded is 35°C in the months of July-August and the minimum is 11°C in the months of December-January.
15.	LAKHIMPUR	The annual mean rainfall in the district is 300 cm. The maximum and minimum temperatures are 31°C and 7°C respectively, while the mean temperature is 19°C.
16.	DHEMAJI	The annual mean rainfall in the district is 300 cm. The maximum and minimum temperatures are 31°C and 7°C respectively, while the mean temperature is 19°C. As per Census Report, 2001, the district has a total population of 5, 71,944.
17.	TINSUKIA	The average annual rainfall ranges from a minimum of 2134 mm to a maximum of 3785 mm. The minimum and maximum temperatures recorded are 7°C and 37°C during winter and summer respectively.
18.	DIBRUGARH	The average annual rainfall ranges from a minimum of 2134mm to a maximum of 3785mm. The minimum and maximum temperatures recorded are 7°C and 37°C respectively
19.	SIBSAGAR	The normal annual rainfall in the district is 2244.5 mm. The minimum and maximum temperatures are 6.9°C and 37.2°C during winter and midsummer respectively.
20.	JORHAT	The mean annual rainfall in the district is 230 cm. The maximum and minimum temperatures recorded in the district are 32°C and 5°C during summer and winter respectively, while the mean temperature is recorded as 18°C.
21.	GOLAGHAT	The mean annual rainfall in the district is 216 cm. The maximum and minimum temperatures recorded are *32°C* and 6°C respectively while, the mean temperature is *19°C.*
22.	KARBI ANGLONG	The mean annual rainfall in the district is 141 cm. The maximum and minimum temperatures recorded are 25°C and 4°C respectively while the mean temperature is 14.5°C.
23.	DIMA HASAO	The average annual rainfall varies from 2200 to 2300 mm. The maximum and minimum temperatures are 25.8°C and 5.3°C respectively.
24.	CACHAR	The average annual rainfall as recorded in the district is 2717mm. The maximum temperature recorded is 37.4°C and the minimum temperature is 9°C.
25.	KARIMGANJ	The average annual rainfall in the district is 3759.6 mm. The maximum temperature recorded during the month of June is about 36°c and minimum temperature is about 8°C during the month of December-January.
26.	HAILAKANDI	The average annual rainfall is 2717mm. The maximum temperature recorded during summer is 37.4°C and the minimum temperature recorded during winter is 9°C.

GEO-TOPOGRAPHICAL MAPPING OF ALL THE DISRICTS OF ASSAM		
1.	KOKRAJHAR	Kokrajhar district is situated in the lower Brahmaputra valley of Assam between 26° 20'N and 26° 45'N latitudes and 89° 45'E and 91° 00'E longitudes. It occupies 3,49,800 hectares of area. The district is bounded by the interstate boundary of West Bengal on the west and Bhutan in the north. The topography of the district is almost flat, with elevations ranging from 303 meter above m.s.l. in the north and 18 meter above m.s.l. in the south. The soil in the hillocks is old mountain valley alluvial and in the foot hills, it is mainly sandy to loamy textured soils. The soil pH ranges from 4.7 to 7.8 i.e. acidic in nature. As per Census Report, 2001, the district has a total population of 9, 05,764.
2.	DHUBRI	The district is situated in the extreme south western part of the lower Brahmaputra valley of Assam between 25°30'N and 26°30'N latitude and 89°40'E and 90°30'E longitude, with an area of 2, 67,572 hectares. The district is characterized by almost flat topography but the eastern part has an undulating topography. The soil in the northern part of the district is composed of Recent Riverine Alluvial soils (Entiso1s), and that of the lowermost part of the district is formed by Old Riverine Alluvial soils (Inceptiso1s). The soil pH of the district varies from 4.5 to 7.5 i.e. acidic to neutral. As per 2001 Census, the district has a total population of 16, 37,344.
3.	GOALPARA	Goalpara district is situated in the south western part of Assam between 25°53' N and 26° 30' N latitudes and 90°07' E and 91°05' E longitudes having 1,91,100 hectares of area. The topography of the district is characterised by an almost flat plain except for few hills with elevations ranging from 100 to 500 meters. The soils of the district consist of Newer Alluvium on the bank of the Brahmaputra and Older Alluvium near the hillocks and foot hills. The soil pH ranges from 5.5 to 6.8. As per Census Report, 2001, the district has a total population of 8, 22,035.
4.	CHIRANG	The topography of the district is almost flat and plain. The soils of the district consist of Newer Alluvium. The soil pH ranges from 5.5 to 6.8. The average annual rainfall in the district is 1,614 mm. It falls under Lower Brahmaputra Valley Agro-Climatic Zone. It enjoys sub-tropical climate with hot and humid summer followed by cold winter.
5.	BONGAIGAON	The district is situated in the northwestern part of Assam between 26°10'N and 26°45'N latitudes and 90°50'E and 91°00'E longitudes. It occupies 2, 15,900 hectares of area. It is bounded on the east by Barpeta and on the west by Dhubri district. The topography of the district is almost flat plain except for few hills with elevations ranging from 100 to 500 metres. The Brahmaputra River flows along the southern part of the district. There are considerable flood prone areas in the district, caused mainly due to inundation by overflowing rivers and congestion of rain water runoff from the land side. The soils of the district consist of Newer Alluvium on the bank of the Bramhaputra and Older Alluvium near the hillocks and foot hills. The soil pH ranges from 5.5 to 6.8. The average annual rainfall in the district is 1,614 mm. As per Census Report, 2001, the district has a total population of 9, 04,835.
6.	BARPETA	The district is situated in the lower Brahmaputra valley of Assam between 26°5'N and 26°51 'N latitudes and 90°38'E and 91°20'E longitudes. It occupies 320704 hectares of area. It is bounded by Nalbari District on the east and its north boundary is marked by the kingdom of Bhutan.The district is characterised by almost plain topography with the highest elevation of 200 m above m.s.l. in north, while in the south it is below 18 m above m.s.l. The southern side of the district is very low lying and is frequently subjected to flood. Besides these, there are a number of small streams, abandoned channels and marshy lands. The major soil groups are Recent Riverine Alluvial Soil (Entisols), Old Riverine Alluvial soils (Inceptisols) and Old Mountain Valley Alluvial soils (Alfisols). The general pH value of the soils of the district varies from 4.5 to 7.3 i.e. acidic to neutral. As per Census Report, 2001, the district has a total population of 16, 47,201.
7.	BAKSA	The district is situated in the lower Brahmaputra valley of Assam. The district is characterised by almost plain topography with some elevation. All the rivers are perennial in nature. There are some small streams, abandoned channels and marshy lands existing in the district. The soil texture of the district is clay loam and sandy loam. The soil pH varies from 4.5 to 7.0 i.e. acidic to neutral.
8.	KAMRUP (METRO & RURAL)	The district is situated in the lower Brahmaputra valley of Assam between 25°44'N & 26°51'N latitudes and 90°56'E & 92°10' E longitudes, with total area of 4,35,009 hectares. It is bounded by Darrang & Nagaon district on the east and the northern boundary is marked by the Kingdom of Bhutan and the Southern boundary is covered by Meghalaya State. The northern & southern parts of the district are characterised by hill ranges. The middle portion of the district, being a part of the Brahmaputra valley, is characterised by almost plain topography. The general pH value of the soils of the district varies from 4.5 to 6.2. As per Census Report, 2001, the district has a total population of 25, 22,324.

9.	NALBARI	The district is situated in the lower Brahmaputra valley of Assam between 26°07'N and 26°51'N latitude and 91°13'E and 91°43'E longitude. It occupies 221844 hectares area. The district is characterised by almost plain topography with the highest elevation in the north is 219.6 m. above MSL and that in the south below 18 m. above m.s.l.. The soil texture of the north zone in the district is clay loam and that of south zone sandy loam. The soil pH varies from 4.5 to 7.0 i.e. acidic to neutral. As per Census Report, 2001, the district has a total population of 11,48,824.
10	DARRANG	The district is situated in the northern part of Assam State between 26°10'N and 26°58'N Latitudes and 91°43'E and 92°22'E longitudes. It occupies 341399 hectares of area. It is bounded on the east by Sonitpur district, on the north by Bhutan and Arunachal Pradesh and on the south by the river Brahmaputra. The topography of the district is almost flat Swampy areas and naturally depressed vast wetlands locally known as beels constitute a sizeable area. The major rivers that traverse through the district are Barnoi, Nanai, Noa-nai, Mangaldai nai, Mora Dhansiri and Dhansiri. The rivers are all perennial in nature. Both new Alluvium Soils (Entisols) and old Alluvium soils (Inceptisols) are found in the district. As per Census Report, 2001, the district has a total population of 15, 04,320
11	UDALGURI	This district is bounded by Bhutan and West Kameng district of Arunachal Pradesh state in the north, Sonitpur district in the east, Darrang district in the south and Baksa district in the west. Area of the district is 1852.16 km^2. The soils of the district are more or less heterogeneous in nature. The northern part of the district is composed of clay and clay-loam soils whereas the middle part is loamy and sandy. The soil of the southern part of the district is composed of deposited sand and clay.
12	MORIGAON	The district is situated in the Central Brahmaputra valley of Assam between 26° 00' N and 26° 40'N latitudes and 91° 59'E and 92° 35'E longitudes. It occupies 1, 91,100 hectares of area. It is bounded on the east by Nagaon district,on the west by Kamrup district, on the north by Darrang district and south by Karbi Anglong.district. The topography of the district is almost flat plain. Besides, there are many low lying areas and swamps. The soils of the district vary from sandy to clay loam and acidic to near neutral in nature. As per Census Report, 2001, the district has a total population of 7, 76,256.
13	NAGAON	The district is situated in the Central Brahmaputra valley of Assam between 25°35'N and 26°55'N latitudes and 92°15'E and 93°20'E longitudes. It occupies 397600 hectares of area. It is bounded on the east by Golaghat and Karbi Anglong districts, on the west by Marigoan district, on the north by Sonitpur district and south by N.C. Hills and Karbi Anglong district. The topography of the district is almost flat. A number of `Char' area [sand bars] are observed along the Brahmaputra river bed. There are many low lying areas and swamps. The soils of the district vary from sandy to clay loam. And generally acidic to near neutral in nature. As per Census Report, 2001, the district has a total population of 23, 14,629.
14	SONITPUR	The district is situated in the northern part of Assam between 26°30'N and 27°02'N latitudes and 92°17'E and 93°47'E longitudes. It occupies an area of 492145 Hectares. It is bounded on the east by Lakhimpur district of Assam, on the west by Darrang district, on the north by Arunachal Pradesh and on the south by the river Brahmaputra. The topography of the district is almost flat. Along the river Brahmaputra and between the central belt and the Brahmaputra are chronically flood affected. Both New Alluvium Soils (Entisols) and Old Alluvium Soils (Inceptisols) are found in the district. Soils are sandy loam to clay loam in texture and are acidic with pH 4.5 to 6.5. As per Census Report, 2001, the district has a total population of 16, 81,513.
15	LAKHIMPUR	The district is situated in the north eastern part of Assam between 26o 45'N and 27° 35'N latitudes and 93° 40'E and 94° 53'E longitudes. It occupies 3, 00,800 hectares of area. It is bounded on the east by Dhemaji and Dibrugarh, on the west by Sonitpur & part of Arunachal Pradesh, on the north by Arunachal Pradesh and Dhemaji. The topography of the district varies from undulating uplands on the northern foothill belt to low lying plains on the south. Older Alluvium along the foothill Older Alluvium on the flood plains and Newer Alluvium on the recent flood plains. As per Census Report, 2001, the district has a total population of 8, 89,010.

16	DHEMAJI	The district is situated in the north eastern part of Assam between 27° 15'N and 27° 55'N latitudes and 94° 10'E and 95° 30'E longitudes. It occupies 2, 63,701 hectares of area. It is bounded on the north by Arunachal Pradesh. The topography of the district varies from undulating uplands on the northern foothill belt to low lying plains on the south. These rivers flow through the high rainfall region at the foothill of the Assam Himalayas; so the district acts as a runoff zone for the excess water from Arunachal Pradesh. An extensive area of the district is, thus invariably subjected to 3 to 4 waves of flood during the monsoon period. The soils of the district broadly fall into Older Alluvium and New Aluvium. As per Census Report, 2001, the district has a total population of 5, 71,944.
17	TINSUKIA	The district is situated in the north eastern part of Assam between 27° 15'N and 28° 00'N latitudes and 95° 15'E and 96° 00'E longitudes. It occupies 3,47,600 hectares of land.. It is bounded on the east by Arunachal Pradesh, on the west by Dibrugarh district, on the north by Lakhimpur district and south by the Dibrugarh district and part of Arunachal Pradesh. The district is characterised by a flat monotonous terrain from the Brahmaputra river southwards upto the upper Dihing R.F. Soils of this district are divided into three distinct categories. viz. new alluvial soils in an area extending few kms to the south of the Brahmaputra river, old alluvial soils in the central part of the district and old mountain valley alluvial soil located on the foothills of Arunachal Pradesh. As per Census Report, 2001, the district has a total population of 11, 50,062.
18	DIBRUGARH	The district is situated in the north eastern part of Assam between 27° 10'N and 27° 45'N latitudes and 94° 30'E and 95° 30'E longitudes. It occupies 3,54,500 hectares of area, which accounts for 4.52 per cent area of the state. It is bounded on the east by Tinsukia, on the west by part of Sibsagar and Lakhimpur districts, on the north by Lakhimpur district and south by the Sibsagar district and part of Arunachal Pradesh. The district is characterised by a flat monotonous terrain from the Brahmaputra river southwards upto the upper Dihing R.F. where it starts rising slowly into the broken hills that comprise the foothills of the Tirap district of Arunachal Pradesh. Soils of this district are divided into three distinct categories. viz. new alluvial soils in an area extending few kms to the south of the Brahmaputra river, old alluvial soils in the central part of the district and old mountain valley alluvial soil located on the foothills of Arunachal Pradesh on the district. As per Census Report, 2001, the district has a total population of 11, 85,072.
19	SIBSAGAR	The district is situated in the north-eastern part of Assam between 26°42' and 27°15' north latitude and 94°24' and 95°23' east longitude. The district occupies an area of 64250 hectares. It is bounded on the east by Dibrugarh The district is situated in the north-eastern part of Assam between 26°42' and 27°15' north latitude and 94°24' and district of Assam and Tirap district of Arunachal Pradesh, on the west by Jorhat and Dibrugarh districts of Assam, on the north by Dibrugarh district and on the south by Jorhat district of Assam and Mokokchung district of Nagaland. The soils of the district are divided into three main categories viz. New alluvial soil in an area of few kilometres on the south of Brahmaputra, old alluvial soil on the central part of the district and old mountain valley alluvial soils located along the foot hills of Nagaland. The district possesses the famous Panidihing wild life sanctuary. As per Census Report, 2001, the district has a total population of 10, 51,736.

20	JORHAT	Jorhat district is situated in the eastern part of Assam state between 26°20'N and 27°11'N latitudus and 93°58'E and 94°33'E longitudes. It occupies 2,73,047.15 hectares area.. It is bounded on the north by Lakhimpur district of Assam, and on the south by Wokha and Mokakchung districts of Nagaland. The river Brahmaputra flows along the northern side of the district separating Majuli sub-division from the main land. All rivers in the district are of perennial nature. The soils of the district vary from sandy loam to clay loam. The soil is mainly acidic in reaction with pH ranging from 4.5 to 6.5. Shifting cultivation areas are found in the Disai and Tiru hill region of the district. As per Census Report, 2001, the district has a total population of 9,99,221.
21	GOLAGHAT	Golaghat district is situated in the south-east part of Assam state between 25°45'N to 26°40'N latitudes and 93°30'E to 94°29'E longitudes. It occupies 335879.83 hectares. It is bounded on the east by Jorhat district of Assam, on the west by Nowgong and Korbi Anglong districts of Assam, on the north by Sonitpur and Lakhimpur districts of Assam and on the south by Kohima and Wokha districts of Nagaland.The district is characterised by medium and low land topography. In the north-west is the famous Kaziranga National Park. The soil of the district varies from sandy loam to clay loam. It can be classified into three major soil croups i.e. Recent Riverine alluvial soils (Entisols), Old Riverine alluvial soils (Inceptisols) and Old Mountain valley alluvial soils (Altisols). The soil is acidic, pH ranging from 4.5 to 6.5. As per Census Report, 2001, the district has a total population of 9, 46,279.
22	KARBI ANGLONG	Karbi Anglong district is situated in central part of Assam between 25°32'N to 26° 36'N latitudes and 92° 10' E to 93°50' E longitudes. It occupies an area of 1000257 hectares. It is bounded on the east by.Golaghat district of Assam, on the west.by East Khasi Hills of Meghalaya, and on the south by Kohima district of Nagaland, Nortb Cachar hills district of Assam and Jaintia hills district of Meghalaya. The district can be broadly divided into two physiographic units viz., hills and plains. About 85 percent of the districtis covered by hills. The highest peak in the district rises to a height of 1360 metres. The area located between the northern and southern hills in Diphu sub-division is characterised by undalating plains of subdued relief. The soils of the district are made up of laterised Red soils and non-laterised Red soils. The surface soils are generally pale red to reddish brown or bright red in colour. Shifting cultivation is a part of land use/cover. As per Census Report, 2001, the district has a total population of 8, 13,311.
23	DIMA HASAO	Dima Hasao district is situated in the south central part .of Assam between 24°58' and 25°47. North latitudes and 92°32' and 93°28" East longitudes. The district occupies an area of 4,89,793 hectares. The only big town is Haflong which is the district head quarter also It is bounded on the east by the Jaintia hills, on the west by Nagaland, on the north by Karbi Anglong and Nagaon & on the south by Cachar. The district consists mainly of hilly tracts and valleys with a negligible extent of plain area. The topography is rugged with elevations varying from 600 metres to 900 metres. The soils of the district vary from non-laterised red soil to laterised red soil ranging from sandy loam to clayey loam in texture. The non-laterised red soils occupy a relatively less area along a strip in the southern part of the district. The soil is acidic in reaction with pH varying from 4.10 to 6.20. As per Census Report, 2001, the district has a total population of 1, 88,079.
24	CACHAR	Cachar district is situated in the lower Brahmaputra valley of Assam between 24°20'N and 25°10'N latitudes and 92°15'E and 93°15'E longitudes. It occupies 3, 77,600 hectares of area. The district is bounded by Manipur on the east, y Hailakandi district and Bangladesh in west, and Mizoram state on the south. Most of the areas in the district consist of hills and inselbergs leaving behind very little plain area. The lowlying areas are usually characterised by the presence of natural lakes and swamps, locally known as `haors'. The soils of the district vary from alluvial to lateritic, the major areas having a clayey loam to clayey texture. Loam to sandy loam soils are found in riverine tracts of the main river Barak and its tributaries. As per Census Report, 2001, the district has a total population of 14, 44,921.

25	KARIMGANJ	Karimganj district is situated in the S-W part of Assam state between 24°14'N and 24°54'N latitudes and 92°16'E and 92°35'E longitudes. It occupies 1, 76,285 hectares of area. It is bounded on the east by the Cachar district of Assam and the state of Mizoram, on the west by the state of Tripura and Bangladesh, on the north by the Cachar district of Assam and Bangladesh and on the south by the state of Mizoram. The topography of the district is characterised by hills and valley fills. The soils of the district are mostly made of older. Alluvium having a texture of clay loam to clayey. In some parts it is sandy loam in texture. The soil in the district is acidic to neutral in reaction with pH ranging from 4.5 to 6.0. As per Census Report, 2001, the district has a total population of 10, 07,976.
26	HAILAKANDI	Hailakandi district is situated in the lower Brahmaputra valley of Assam between 24°10'N and 24°55'N latitudes and 92°25'E and 92°45'E longitudes. It occupies 1, 32,600 hectares of area e. The district is bounded by the interstate boundary of Mizoram and Cachar district of Assam on the east, Karimganj district on the west. The north boundary is marked by parts of Cachar and Karimganj districts while Mizoram is on the south. The district shares the Son Beel wetland, largest in the state, along the western boundary with Karimganj district. Some of the areas in the district consist of hills. The low lying areas are usually characterised by the presence of natural lakes and beels, locally known as `haors'. The soils of the district mostly made of older alluvium having a texture of clay-loam to clayey. Beel soils (peat soils) are also found in some areas. The soil in the district is acidic to neutral in reaction with pH ranging from 4.5 to 6.0. As per Census Report, 2001, the district has a total population of 5, 42,872.

METEOROLOGICAL DATA OF DIFFERENT AGRO-CLIMATIC ZONES OF ASSAM.	
Based on rainfall, terrain and soil characteristics, Assam State has been broadly divided into the following six agro-climatic zones: **Zone (A). North Bank Plains** **Zone (B). Upper Brahmaputra Valley** **Zone (C). Central Brahmaputra Valley** **Zone (D). Lower Brahmaputra Valley** **Zone (E). Barak Valley** **Zone (F). Hills**	
A. NORTH BANK PLAINS	This zone comprises the districts of Lakhimpur, Dhemaji, Darrang and Sonitpur with an area of 14421 km². **Physiography, climate and soils**: This zone can be divided in to 3 parallel belts. (1) In the foothills of Himalayas, alluvial soils are found with dense forests. On the south of this belt there are small tea plantations extending from Subansiri river to river Barnadi; (2) The central belt comprises old alluviums which are acidic. Near the river banks there are new alluvial which are either neutral or less acidic. (3) The low lying riverine belt lies by the side of Brahmaputra on the eastern side Darrang district. The climate is characterized by an average rainfall of 1000 mm and high humidity of more than 80%. The maximum temperature rises upto 37°C in July-August and the minimum falls to 5°C in January. Fifty per cent of total rainfall comes during 7 month period of the rainy season.

B. UPPER BRAHMAPUTRA VALLEY	This zone comprises the districts of Sivasagar, Jorhat, Golaghat, Dibrugarh and Tinsukia with an area of 16,192 km². **Physiography, climate and soils**: The topography slopes down gradually from the hills towards the Brahmaputra. It has got half a dozen important tributaries of the Brahmaputra. These tributaries start in the hills of Nagaland and Arunachal Pradesh and traverse the zone rapidly to join in the Brahmaputra. The soils are mostly new alluvium near the Brahmaputra and old alluvium in the central belt of the zone. The climate is characterized by high rainfall, i.e., more than 2000 mm per annum and high humidity (more than 80%). The maximum temperature rises up to 37°C in July-August and minimum falls to 5°C in January.
C. CENTRAL BRAHMAPUTRA VALLEY	This zone comprises the district of Nagaon and Morigaon with an area of 5561 km². **Physiography, climate and soils**: This zone is situated in the center of the State is encircled by hills on all sides, except on the north where it is bounded by the Brahmaputra. Because of its Physiography, this zone is like a basin and is inundated during the monsoon. A number of rivers traverse through this zone. These rivers start in the Karbi Along and flow into the Brahmaputra. Compared to lower Brahmaputra Valley, soils here are lighter in texture and are not underlain by rocks and aquifers. About 30% of the area in this zone comes under rain shadow belt where the rainfall is much lower (600 mm) than other areas of the Assam plains (1600 mm). The maximum temperature rises upto 38°C in July-August and minimum falls to 8°C in January. Both new alluvial and old alluvial soils are found here.
D. LOWER BRAHMAPUTRA VALLEY	This zone comprises the district of Kamrup, Dhubri, Bongaigaon, Nalbari, Barpeta, Kokrajhar and Goalpara with an area of 20148 km². **Physiography, climate and soils**: On the north of this zone lie the folded ranges of the Himalayas, and in the south the Shillong plateau. The mighty Brahmaputra flows through the zone. The northern part of the zone is characterized by small hillocks and some low lying areas here and there. Flood plains of Brahmaputra extending up to the river Jinjiram bordering Meghalaya constitute the southern part of the zone. Soils of this zone consist of new alluvium on both the banks of the Brahmaputra and old alluvium towards the foot hills. Soils are mostly sandy and sandy loam in texture. Soils of the zone are acidic in reaction, though a large area is also covered by nearly neutral soils. The average rainfall in the zone is about 1700 mm per annum. Rainfall in the south-eastern part of the zone is low and it increases towards the north and the west. The shallow rivers flowing from the Bhutan hills with torrential currents cause enormous loss of animal lives, properties and crops every year. The maximum temperature rises upto 31°C in July-August and minimum falls to 10°C in January.

E. BARAK VALLEY	This zone comprises the district of Cachar, Hailakandi, Karimganj with an area of 6922 km². **Physiography, climate and soils**: This zone is separated from the Brahmaputra Valley by the two hill districts viz., Karbi Anlong and North Cachar. This zone has a total area of 6962 km². This zone is bounded in the north by North Cachar hills, in the east by Manipur hills, in the south by the hills of Mizoram, and in the west by Bangladesh and Tripura. The zone is characterized by undulating topography. The hills and hillocks, locally known as `tillas' predominate the land surface. The plains have a great deal of marshy lands. There are two important rivers, viz., Barak and Kushiara in this zone. Alluvial soils in the flood plains are fertile. Red loam soils in the submontane tracts are relatively more deficient in plant nutrients. The Barak plains have a great deal of low marshy lands. Organic soils are found in the swampy `beels'. Most of the soils are acidic in nature. The climate is characterized by high rainfall (more than 2000 mm), high temperature and high humidity. Maximum temperature rises up to 37°C in July-August and minimum falls to 9°C in January.
F. HILLS	This zone comprises the district of Karbi Along and North Cachar Hills with an area of 15322 km². **Physiography, climate and soils**: Both the districts of the zone are characterized by undulating topography. The North Cachar hills are high and steep. In Karbi Along the hills have gentle slopes. The predominant soils in this zone are lateritic on the slopes and red loams in the valleys. The soils developed in the plateau vary greatly in age and composition. In Karbi Along district there are considerable plains areas on the north adjoining the districts of Golaghat and Nagaon. Here the soils are mostly old alluvial. Rainfall and temperature differ substantially among the different parts of the zone due to varying altitudes and location of hills and valleys. The total rainfall is about 1,144 mm in North Cachar hills and 600 mm in Karbi Along. The maximum temperature goes upto 37°C and minimum to 9°C at Haflong.

3. Population trend of Goats in Assam:

As per the livestock Census 2007, the population of AHG in the state of Assam has been estimated to be 43.76 lakhs with a significant annual growth rate of 9.66 which is substantially higher than the national growth rate of 3.10 over the last few years. Goat population of Assam from 1997 to 2007 along with district wise distribution of the population has been shown as under:

DISTRICT WISE GOAT POPULATION OF ASSAM OF LAST THREE LIVESTOCK CENSUS

Sl. No.	District	AS PER 16TH LIVESTOCK CENSUS 1997			AS PER 17TH LIVESTOCK CENSUS 2003			PER 18TH LIVESTOCK CENSUS 2007		
		Male	Female	Total Goats	Male	Female	Total Goats	Male	Female	Total Goats
1.	Goalpara	30854	48483	79337	24124	48042	72166	37066	57203	94269
2.	Kokrajhar	29201	36998	66199	34531	44342	78873	69930	115194	185124
3.	Dhubri	67551	102239	176790	92074	105433	197507	82410	138451	220861
4.	Bongaigaon	43996	78803	122799	50880	76420	127300	26559	65030	91589
5.	Barpeta	37596	70480	108076	76945	101423	178368	75830	158300	234130
6.	Nalbari	56303	99403	15570	55322	11785	17317	39903	87666	12756

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7.	Kamrup	51180	57511	108691	61963	104635	166598	96014	185564	281578
8.	Morigaon	51408	42758	94166	46312	76979	123291	49729	73738	123467
9.	Nagaon	93580	76241	169821	121336	98707	220043	135261	226726	361987
10.	Darrang	86450	74401	160851	68033	91513	159546	56655	103694	160349
11.	Sonitpur	98381	141644	240025	81779	110497	192276	134921	195276	330197
12.	Golaghat	34734	85296	120030	90645	128482	219127	83625	128100	211725
13.	Jorhat	40123	65120	105243	69011	112034	181045	74274	108121	182395
14.	Sivasagar	20860	40810	61670	53947	104810	158757	54528	117527	172055
15.	Dhemaji	20657	31350	52007	11817	30232	42049	52202	83443	135645
16.	Lakhimpur	42115	64579	106694	52290	67507	119797	66554	101698	168252
17.	Dibrugarh	52737	72174	124911	41458	54336	95794	82497	137996	220493
18.	Tinsukia	49266	44709	93975	41624	43396	85020	63184	67570	130754
19.	Karbi Anglong	47184	98000	145184	948	28075	29023	73818	102732	176550
20.	Dima Hasao	9810	9693	19503	10705	27275	37980	18733	21700	40433
21.	Cachar	52988	118614	171602	57691	95376	153067	51728	105763	157491
22.	Hailakandi	26109	52695	78804	20864	40850	61714	20086	42098	62184
23.	Karimganj	46183	69090	115273	46645	67750	114395	47446	74483	121929
24.	Baksa	-	-	-	-	-	-	64634	96910	161544
25.	Chirang	-	-	-	-	-	-	22432	34725	57157
26.	Udalguri	-	-	-	-	-	-	67127	99296	166423
ASSAM TOTAL		1089266	1588091	2677357	1210944	1775969	2905550	1647146	2729004	4376150

4. Strength and weakness of goat husbandry in Assam :

Goats in general are proved to be valuable to the human civilization due to their productivity and non-competitiveness with human for food. Goat farming plays a very critical role in Assam especially to the poor and marginal farmers in the rural areas because of low input, high fecundity and unprejudiced social acceptance of their products. However, the significance of this valuable animal resource is often underestimated. The various strength and weaknesses of husbandry practices of goats in Assam are highlighted below:

Strength:

1. Substantially large population size.
2. The animals are well adapted to hot and humid agro-climatic condition of the state.

3. Well adapted to climatic stress, disease resistance, low quality feeds and poor management.
4. Low capital investment and production input due to small body size.
5. No religious taboo for consumption and rearing
6. High feed conversion efficiency and suitable to small farm system.

Weakness:

1. Scarcity of superior breeding buck
2. Indiscriminate breeding
3. Poor marketing facilities.
4. Lack of breeding policy and concerted breed development programme
5. Lack of breed societies
6. Inadequate and poor slaughter facilities
7. Poor awareness of the farmers for improved management practices /technologies/ inputs

5. Performance of Assam Hill goats :

(i) Body weight:

Body wt. (kg) / Sex	Birth	3 months	6 months	9months	12 months
Male	1.28	5.22.	7.90	10.56	**13.51**
Female	**1.13**	**4.99**	**7.51**	**9.86**	**12.86**

(ii) Biometric dimensions (in cm)

Sex/ Traits		Age				
		Birth	3 Month	6 Month	9 Month	12 Month
Male	Body length	30.21± 0.21	46.83±0.62	53.83±0.84	63.01±0.69	66.95 ± 0.88
	Body height	25.79±0.20	38.59±0.50	42.60±.58	47.07±0.57	50.65±0.84
	Heart girth	26.45±0.19	43.17±2.30	47.13±0.63	53.78±0.92	57.93±1.10
Female	Body length	29.80±0.23	45.62±0.72	50±0.59	56.35±0.59	64.36±0.66
	Body height	25.06±0.22	36.95±0.42	40.42±0.40	44.55±0.35	49.60±0.44
	Heart girth	26±0.19	40±0.52	44.41±0.59	49.88±0.79	55.91±0.60
Overall	Body length	30.02±0.16	46.29±0.47	51.81±0.60	58.89±0.69	65.21±0.55
	Body height	25.45±0.15	37.86±0.34	41.45±0.35	45.51±0.33	49.94±0.40
	Heart girth	26.24±0.14	41.76±1.31	45.69±0.44	51.37±0.63	56.57±0.55

(iii) Reproductive Performance:

Traits	Average
Age at 1st service (days)	254.91±7.00(8-9 m)
Wt at 1st service (kg)	9.84±0.20
Age at 1st kidding (days)	402.98±14.57 (13-14 m)
Wt at 1st kidding (kg)	13.70±0.21
Service Period (days)	94.41±5.41
Kidding interval (days)	247.73±4.54 (8-9 m)
Gestation period (days)	147.67±0.62

(iv) Productive Performance

The animals of this breed are particularly known for its superior meat quality which is highly palatable, juicier and fine textured. The average dressing percentage of the animals has been recorded to be 48 to 50 % on live weight basis.

Traits	Average
Wt. at Slaughter (kg)	11 – 12
Hot carcass Wt. (kg)	5.0 – 6.0
Dressing Percentage (%)	48 – 50
Carcass Length (cm)	50 – 55
Wt. of Skin (kg)	1.00 – 1.20
Wt. of Edible Offal (kg.)	0.320 – 0.350

The reproductive ability of Assam Hill Goat is very high which is evident from higher twinning and triplet kiddings, however, in many instances, quadruplets are also recorded. The females may be bred at an age of 8 – 9 months of age with a kidding interval of 8 – 9 months.

6. Management system of goats in Assam

Management:

Assam Hill goats are reared by the farmers under semi-intensive system of management where the goats are allowed to graze during day time. The animals return to the shed in the evening for night shelter. The kids are either allowed to go along with their mothers during grazing or are kept in the shed till they start nibbling grasses.

Feeding:

Open grazing system in the field and hillocks are commonly practised. No cultivated fodder or concentrate in any form are supplied to the animals. However, during rainy days the animals are provided with tree leaves (jack fruits, neem trees etc.).

Housing:

Goats in Assam are mostly reared in small herds. A farmer keeps 2-5 numbers of goats which are provided with housing made of locally available housing materials viz. wood or bamboo

etc. Goats are kept in sheds with kuccha floors or sometimes in sheds with wooden plank flooring. Some farmers also provide a type of house called "*Chang Ghar*" (raised platform about one metre above the ground, made of wood or bamboo).

Breeding:

The knowledge on breeding is very limited amongst the rural farmers. They keep only one or two breeding bucks which are used for breeding extensively in the entire locality for several generations. Such type of breeding practices with limited number of males in any livestock population is dangerous in the sense that it leads to inbreeding causing deterioration in the performance.

Health care:

Routine health care measures, *viz.*, vaccination, deworming etc. are not followed regularly by the farmers. The two major health care issues pertaining to the goats of Assam are enterotoxamemia and parasitic infestations (Haemonchus, Coccidia, tapewoms etc.) which can be prevented by timely vaccination and deworming.

7. Proposed Goat Breeding Policy:

In Assam people rear goat in small numbers for both milk and meat production. However earning from goats comes mainly through sale of live animal at market age. Considering the high fecundity and adaptation to almost zero-input management practices the farmers prefer to rear only the local goat of Assam. Thus, for improvement of the genetic potentiality of the goat population of Assam infusion of other goat germ plasm is not advocated. The improvement will be sought only through selection and straight/pure breeding. For this few elite flocks of local goat will be established. Basis of selection of breeding animals in these flocks will be growth, conformation, fecundity etc. Emphasis will be on achieving maximum genetic gain by way of selection of breeding bucks and their extensive use through AI or natural service in the female goats.

(a) Choice of breed of goat:

Different exotic breeds of goat viz., Saanen, Toggenberg, Alpine etc. were earlier introduced in India in an attempt to improve the goat germ plasm. Indian breeds like Beetal, Jamunapari etc. are also being used in different parts of the country for improvement of the local stock through upgrading. In Assam too Indian breeds of goat like Beetal & Sirohi are used in some of the areas for the purpose of augmenting meat production potentiality of the local goat through upgrading. However, looking into the overall merit of the local goats of Assam over the other improved breeds, the management systems of goat in the state, people's preference, holding size, maintenance cost etc., it is seen that there is no necessity of introducing any other breed of goat in general for crossbreeding or upgrading the local stocks since it will itself be able to provide the required output in terms of meat by dint of its high reproductive efficiency or prolificacy reflected through higher incidence of multiple birth if they are improved through selective breeding.

Hence, it is planned to improve the local goat of Assam through selective breeding without introducing any other exotic or Indian breeds.

(b) Breeding and reproduction technology:

For any livestock improvement programme, the scientific selection procedures and appropriate breeding systems are the two important tools. The modern biotechnologies can make these tools even more effective by increasing the reproductive efficiency of breeding animals. Biotechnological tools available for animal improvement programmes are artificial insemination(AI), multiple ovulation and embryo transfer(MOET), cryopreservation of semen and embryos etc. Amongst all, AI has found an important place in livestock improvement programme. Once a genetically superior male is identified it can be used to inseminate thousands of otherwise inferior females by A.I. technique. Thus the genetic merit of a population can be increased at a rapid stride through AI technique. This technique is more widely used in cattle and buffalo and less in goat. The state A.H. and Vety. Dept.will have to take proper step to boost up goat production through use of superior male germ plasm through AI. Embryo transfer technology and MOET are other advance biotechnological tools which will help in multiplication of superior male as well as female goat germ plasm at a much shorter period of time, thereby helping to get a flock of quality goat within a limited period.

(c) Breeding Plan:

On critical observation on the important aspects, *viz.* population of goat of Assam, population trend, socio economic importance of goat and the strength and opportunities of this germ plasm, the genetic improvement of Assam Hill goat can be based on within breed selection. However, the goat population in Assam is constrained by single sire flock, lack of animal identification, low levels of farming literacy of farmers and poor feeding and health care. Therefore, the suitable strategy for genetic improvement of AHG would be selective breeding using the open nucleus breeding system.

This system envisages genetic improvement in small fraction of the population (nucleus) where inbreeding is avoided. Recording of data is done in the nucleus only. Nucleus and multiplier flocks generate sires for distribution to the farmers. The nucleus will allow animals of high merit to be migrated up for breeding in the nucleus.

(d) Selection of breeding animals:

A nucleus herd will be established in each district comprising 200 does and 20 bucks of Assam local goat initially selected from the field based on some conformation traits, dam's performances etc. Breeding of these animals in the nucleus herd will generate male/female progeny, which will again be selected based on growth, body conformation, dams performance etc and will be allowed to mate for further propagation of progeny. Stringent measures would be taken to avoid inbreeding in the nucleus herd. Now the best males born out of these mating will be used as breeding buck and distributed in the field/block for extensive use either through AI or natural service in the females at farmer's house.

The nucleus herd envisaged above should have the facilities for proper recording system so that the best males can be selected on the basis of available records of their dams siblings as well as on the basis of their own records.

Here the nucleus will be kept open in the sense that the replacement stock with high genetic merit will be made available from the field into the nucleus herd. The best male as well as female progeny in the field will be identified and brought back to the nucleus herd as a replacement stock to allow further propagation. The cycle of selection and breeding in the field and the nucleus herd to maintain the total strength as specified will continue till a satisfactory level of improvement in performance of these goats is achieved.

(e) *Criteria of selection of breeding animals:*

The breeding animals will be selected on the basis of following criteria:

i) The animals should be free from physical deformities
ii) Should be in a condition of sound health
iii) Both the buck and the doe should be siblings of multiple birth
iv) Kidding interval of dam should be 7-8 months
v) Age at first service of the doe should be around 7 months.
vi) Weight at first service should be 9-11 kg.
vii) Body weight of the buck at 6 months of age should be around 8 kg.

(f) Plan of Work of ONBS:

1. Screening of the unrecorded base population for identifying some outstanding females.
2. Collection of the outstanding females to form the nucleus herd which would be used as test group of animal.
3. Super ovulation of the elite animals from the outstanding herd and in vitro fertilization with semen of superior male.
4. Transfer of the resulting embryos to the test group in the nucleus herd as well as to the female in the unrecorded base population.
5. The best males will be selected on the basis of their own performances as well as on the performances of their siblings. They will then be exclusively used in the field.
6. The female offspring will be considered as potential elite females to donate embryos by MOET for the following cycle after their appraisal against elite does already present in the nucleus herd.
7.

(g) Data recording system:

Although, the Assam Hill goat has an immense production potential, its optimum potential has not fully expressed due to subsistence production system. Therefore, to frame a breeding strategy for improvement of Assam Hill goat emphasis should be given not only to absolute production but also to production and economic efficiency in relation to local environment and farming system. In view of this, the following important information need to be recorded:

(A) On the farmers :

i) Occupation and education of the farmer
ii) Land holding and area devoted for fodder production
iii) Number of animals-age and species wise
iv) Housing system
v) Management system
vi) Identification of animal

(B) On animals :

(I) Data on Dams

i) Kidding number(Parity)
ii) Date of service(AI/NS)
iii) Date of conception
iv) Date of kidding
v) Sex of kids
vi) Kid size (twining/triplet/Single)

(II) Data on progeny:

i) Date of birth
ii) Body weight at birth, 3, 6, 9 and 12 months
iii) Growth rate

Execution of the Breeding Plan:

Since the improvement of goat germ plasm of the state of Assam is sought through selective breeding, the first and foremost requirement to go ahead with the breeding plan is to make available the superior breeding buck. The breeding policy proposes to follow the pure breeding programme through use of selected buck on the local does in the farmers field so that 100% purity

of the local germ plasm is maintained in the subsequent progeny generation coupled with improvement in the desired traits. For this a nucleus herd of local goat comprising of selected animals will be established. The selected buck (100% local germ plasm) will be used for breeding in females (100%) in the field through AI or natural services. The progeny produced out of these breeding will be 100% local. The female progeny so produced will again be mated with the selected male only. The best male progeny will be selected and put into the nucleus herd. The breeding of females in the field with selected males will be continued so that the local germ plasm of goats are transformed into a superior repository after few generation of continuous selection and breeding.

(h) Action plan to be prepared:

For proper implementation of the goat breeding policies, detailed action plans with appropriate time frame be prepared in accordance with guidelines given by the experts and the state departmental officials for the following.

- Plan for establishment of nucleus herd of goat in designated areas
- Plan for proper recording system of data in the nucleus herd and in the field.
- Work plan for semen production from goat in different production centres.
- Schemes for adoption of MOET in designated areas
- Detailed breeding plan for pure breeding of local goat
- Farmers training, training of unemployed youth and woman awareness camp for implementation of the policy, data recording system in the field etc.
- Animal production and health information system , data bank and networking through computer
- Scheme for livestock insurance, credit etc.

(i) Additional recommendations for effective implementation of the goat breeding policy:

The following additional recommendations are to be followed mandatorily for successful implementation of the goat breeding policy in Assam:

1.The proposed goat breeding policy for the state of Assam will be implemented by the A. H. and Veterinary Dept., Govt. of Assam. Any effort for goat improvement by individuals, public organizations and nongovernmental organizations etc. must be in conformity and within the purview of the proposed policy. Thus, the policy will be mandatory for the state of Assam. However interested farmers may rear goats of other improved breeds for commercial purposes without causing any hindrance/interference to the proposed goat breeding policy.

1. A technical committee be constituted to monitor and evaluate the implementation of the policy. This committee will have advisory capacity.
2. The A.H. and Veterinary Dept., Govt. of Assam will carry out farmers awareness programme on the policy and record keeping system. Necessary format for keeping records in the station and also in the field by the farmers be developed and distributed.
3. Training/refreshers course for field veterinary officers on different aspects of breeding, reproduction, management, nutrition, health care etc. may be conducted/ organized for effective implementation of the policy.
4. Indiscriminate breeding and slaughter of potential males should be banned.
5. Necessary legislation for implementation of breeding policy should be enacted.
6. The proposed "Goat Breeding Policy" shall remain open to be revisited as and when felt necessary

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