



सत्यमेव जयते

GOVERNMENT OF ASSAM

# STRATEGY PAPER

ON FEED & FODDER  
SECTOR, ASSAM

**TARGETS AND GOAL FOR 2019-2024**



ANIMAL HUSBANDRY  
& VETERINARY DEPARTMENT  
*Government of Assam*

**ANIMAL HUSBANDRY AND VETERINARY DEPARTMENT**

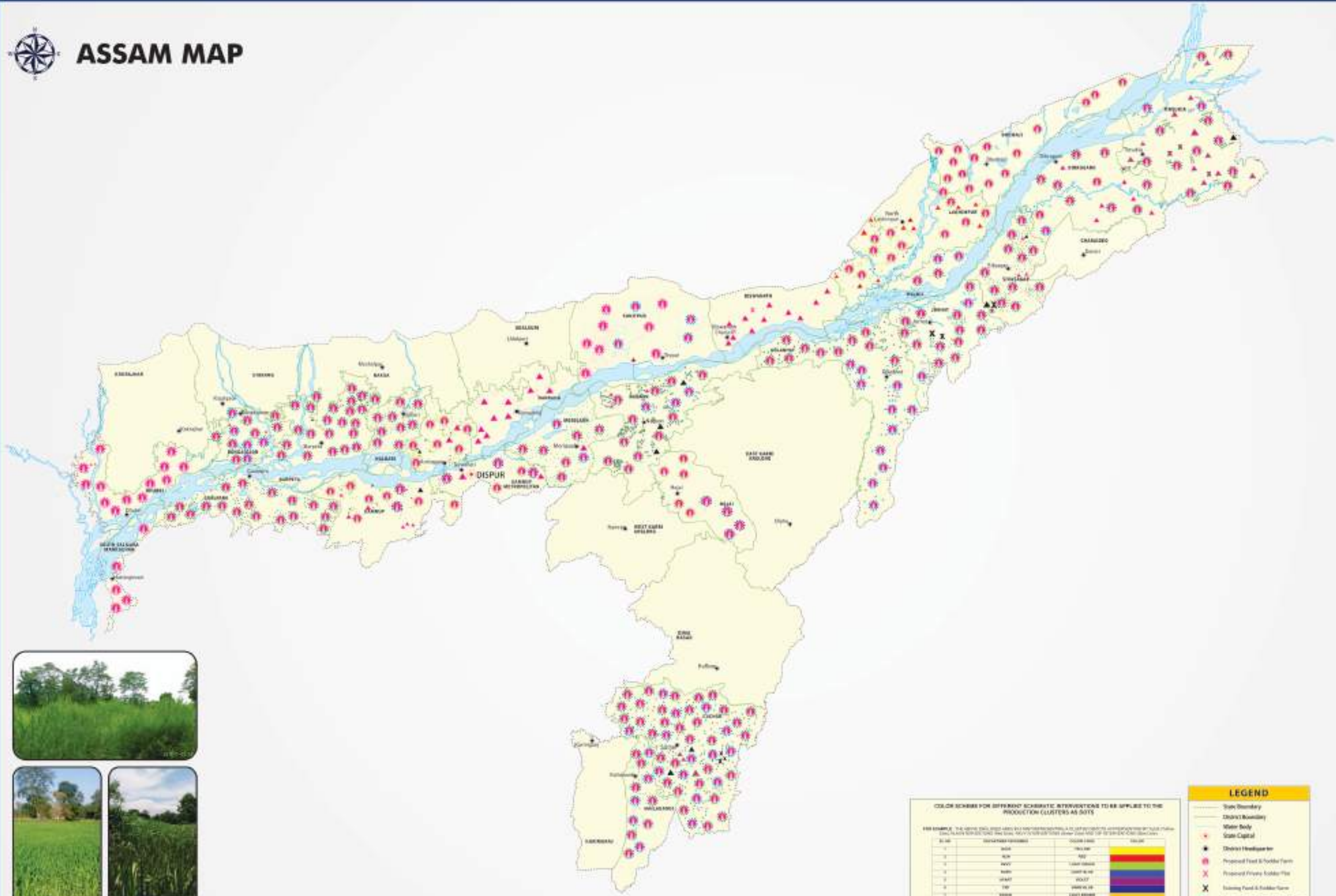
ASSAM::GUWAHATI-781003



# FEED & FODDER SECTOR



## ASSAM MAP



Note: Map does not include sixth schedule areas of the state ( only general areas)

**COLOR SCHEME FOR DIFFERENT SCHEMATIC INTERVENTIONS TO BE APPLIED TO THE PRODUCTION CLUSTERS AS SITES**

FOR EXAMPLE: The above color code shall be applied to the production clusters as sites. The color code shall be applied to the production clusters as sites. The color code shall be applied to the production clusters as sites.

Cluster No.	Cluster Name	Cluster Area (Ha)	Cluster Type
1	101	10000	101
2	102	10000	102
3	103	10000	103
4	104	10000	104
5	105	10000	105
6	106	10000	106
7	107	10000	107
8	108	10000	108
9	109	10000	109
10	110	10000	110
11	111	10000	111
12	112	10000	112
13	113	10000	113
14	114	10000	114
15	115	10000	115

**LEGEND**

- State Boundary
- District Boundary
- Main Body
- State Capital
- District Headquarter
- Proposed Feed & Fodder Farm
- Proposed Private Fodder Farm
- Existing Feed & Fodder Farm
- Proposed Govt. Feed & Fodder Farm
- Existing Private Feed & Fodder Farm
- Proposed Govt. Feed Mill

# **STRATEGY PAPER**

## **ON FEED & FODDER SECTOR, ASSAM**



**ANIMAL HUSBANDRY AND VETERINARY DEPARTMENT**  
**ASSAM::GUWAHATI-781003**

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## DRAFT FODDER POLICY ON FODDER CULTIVATION IN ASSAM & STRATEGY OF A.H & VETY. DEPARTMENT

### 1. EXECUTIVE SUMMARY:

- 1.1. India being the highest producer of milk with highest livestock population of 512 (approx.) million in the world produces around 140 million tones of milk. Majority of milk produced comes from the small farms. The livestock sector in India contributes to nearly 32% of total agricultural output.
- 1.2. The Government of India has recognized fodder shortage as real & long lasting issue. It has felt to take some steps to control the damage due to fodder shortage; like it has pointed fodder shortage a priority in the National Dairy Plan. It has also decided to expand the network of Fodder Research Stations to address this problem.
- 1.3. While inaugurating the 23<sup>rd</sup> International Grassland Congress in New Delhi on 20<sup>th</sup> November 2015, the then Agriculture Minister Shree Radha Mohan Singh mentioned that fodder resources in India are from crop residues, cultivated fodder, forage & forests, permanent pastures & grazing land. Currently, India is facing a deficit of 35.6% of green fodder and about 10.9% of dried fodder. He also said that Government would bring out the National Fodder Policy to boost domestic production. According to him the country is facing shortage of fodder majorly due to shrinking of the Country's grassland.
- 1.4. Fodder production is an important part of livestock production plays a vital role in the livelihood and economy of those who are living on livestock sector. The livestock sector apart from contributing to national economy in general and to agricultural economy in particular also provides employment opportunities to the rural youths. Fodder cultivation is directly related to the milk production besides production and productivity of livestock including their health. Hence sustainable development of livestock sector depends solely on quality green fodder production in requisite quantity.
- 1.5. India with 2.3% share of global geographical area supports nearly 20% of the livestock population of the World, notably among them are cattle (16%), buffalo (55%), goat (20%) and sheep (5%). The desired annual growth of agriculture sector @ 4% can also be accomplished by enhancing productivity from the livestock sector. This would require a steady supply of fodder for supporting the livestock population. Having only 4% of total cropping area under fodder cultivation has resulted in a severe deficit of green fodder (36%), dry fodder (40%) and concentrates (57%). The need of the hour is, therefore, to fulfill this shortfall in demand for fodder (which is over 55%) from crop residues and agricultural bi-products.

### 2. Introduction:

Assam is a State in North East India, situated South of the Eastern Himalayas along the Brahmaputra and Borak river valleys. Extending from to 96°E longitude and 24°8'N to 28°2'latitude , it has an area of 78, 438 km square.

Sl.no.	Features	Measurements
	Total geographical area	7. 8438 million ha
	Forest	20, 12,319 ha
	Area not available for cultivation	24, 55, 613 ha
	Net area sown	25, 45, 000 ha
	Total cropped area	36, 94, 000 ha
	Area sown more than once	12, 15, 195 ha
	Cultivable wasteland	88, 043 ha
	Area affected by flood annually	3-5 lac ha

*(N. B. these are some vital statistics about the State of Assam as per last census 2012)*

**Animal statistics:**

Sl. No.	Districts	Crossbred cattle	Indigenous cattle	Buffaloes	Goat	Pigs	Sheep
1	Kokrajhar	2423	323239	13290	128473	88409	16293
2	Dhubri	6077	502284	13043	273502	4564	118171
3	Goalpara	4120	284374	7283	135077	49353	29105
4	Barpeta	37074	346474	27044	194640	13373	97667
5	Morigaon	27777	290064	4179	140982	23287	12035
6	Nagaon	43421	719439	7445	377870	44591	11966
7	Sonitpur	34963	907329	36106	501799	156574	13449
8	Lakhimpur	3900	603782	13819	210354	131243	1349
9	Dhemaji	826	452564	14547	143154	118913	716
10	Tinsukia	12749	395788	17247	203779	64344	322
11	Dibrugarh	9681	438400	12312	295615	116950	755
12	Sibsagar	9307	401792	24406	222984	86970	932
13	Jorhat	11893	479602	26449	182531	71943	358
14	Golaghat	10712	402175	15153	236699	86297	905
15	Karbi Anglong	23221	340122	14934	281099	162295	842
16	Dima hasao	3848	23110	24294	42238	34364	364
17	Cachar	20828	309937	56036	159025	28182	17440
18	Karimganj	16917	247787	40041	108314	14624	21412
19	Hailakandi	12759	148753	27947	89873	6960	18370
20	Bongaigaon	6847	202043	1783	113211	10167	31487
21	Chirang	1712	226159	7692	82571	54412	13716
22	Kamrup	17489	523838	7946	423714	68473	33110
23	Kamrup (M)	27398	88940	891	64802	22487	982
24	Nalbari	24648	235502	4552	188991	17847	14060
25	Baksa	7625	353762	2528	191859	80612	13334
26	Darrang	11349	331676	12522	191700	9821	41441
27	Udalguri	6338	332767	1775	984337	68967	7486
	<b>TOTAL</b>	<b>395902</b>	<b>9911702</b>	<b>435265</b>	<b>6169193</b>	<b>1636022</b>	<b>518067</b>

Livestock Sector of the Department includes animals like cattle, buffaloes, goats, sheep, pigs, horse, and rabbits. A table containing the population of the animals of major importance (District-wise) in Assam as per 19<sup>th</sup> livestock census,

The Department, at present, concerned for fodder production mainly for the cross bred cattle population in order to increase their milk production. Taking into account this population, the State has following requirement & shortfall of fodder & milk as following:

.items	Fodder/milk (approx. average annual Production, demand, shortfall)	Quantity
Fodder	requirement	23, 15, 925 MT
	production	85, 633 MT
	shortfall	22, 30, 292 MT



Milk	requirement	2507 million litre
	production	904 million litre
	shortfall	1603 million litre

**(N. B. Milk production requirement as per integrated sample survey report 2016-2017)**

The shortfall of fodder as shown in the table is for the cross bred population of cattle only. In future due to shrinkage of grazing land it may not be possible for open grazing, minimum open space may be available to a negligible nos. of animals. In such a situation, production & productivity of all animals would be dependent upon mainly on cultivated green fodder.

At present, the chief purpose of green fodder production is to make it available to the cattle to increase production of quality milk. However, in coming days, it has to encompass all aspects of animal rearing viz. quality milk, meat, egg production, general animal health, fertility & reproduction etc.

Hence, to cover all kind of situations & all types of farm animals the purview & scope of the Fodder Sector proportionately be widen. Success of livestock Sector is directly co-related with the production & supply of quality green fodder beyond any doubt.

The following table shows district wise shortfall of green fodder calculated taking into account the crossbred cattle population of the respective district.

District wise shortfall of fodder in detail (as per livestock census 2012):

Sl. No.	District	Total exotic/crossbred cattle (Nos.)	Shortfall of fodder in ton/annum {(Total shortfall/Total animals) x total animals per district}
1.	Baksa	7625	42955
2.	Barpeta	37074	208854
3.	Bongaigaon	6847	38571
4.	Cachar	20828	117333
5.	Chirang	1712	9644
6.	Darrang	11349	63934
7.	Dhemaji	826	4653
8.	Dhubri	6077	34234
9.	Dibrugarh	9681	54537
10.	Dima hasao	3848	21680
11.	Goalpara	4120	23210
12.	Golaghat	10712	60345
13.	Hailakandi	12759	71877
14.	Jorhat	11893	67000
15.	Kamrup	17489	98523
16.	Kamrup (m)	27398	154345
17.	Karbi Anglong	23221	130814
18.	Karimganj	16917	95300
19.	Kokrajhar	2423	13650
20.	Lakhimpur	3900	21970
21.	Morigaon	27777	156480
22.	Nagaon	43421	244610
23.	Nalbari	24648	138855





24.	Sibsagar	9307	52430
25.	Sonitpur	34963	196962
26.	Tinsukia	12749	71820
27.	Udalguri	6338	35705
<b>Total</b>		395902	2230292

(N. B. Average requirement of Fodder in average @ 16 kgs/day/animal)\

### 3. Necessity of fodder policy:

Till now a suitable fodder policy is there neither at national level nor at state level in Assam. The Government of India has proposed a national fodder policy to address the problem of fodder shortages and to boost domestic production. The main agenda of project is to address fodder shortage and framing laws to control burning of crop residues in order to use as fodder & to protect environment. Now, the Government of Assam is going to propose a fodder policy with the same main agenda.

#### Policy levels:

- 3.1. **National/State level:** The absence of pasture management and grazing policy at national/state level have rendered the pasture lands including village common lands and uncultivable waste land as unproductive. Hence policies to govern the fallow and uncultivable waste land should be implemented.
- 3.2. **Institutional/departmental level:** There is no designed agency to steer the management of grazing lands & fodder resources in the country. The Forest Department, in their endeavour to bring 33% land area under forest cover, have been busy in closing the grazing lands for raising plantations, mainly of commercial tree species. Better institutional framework and linkage between institutes with same motto of fodder sustainability should be done.
- 3.3. **Resource level:** There is acute deficit of fodder in the country with livestock, especially for those dependent upon open grazing, getting less than 1/5<sup>th</sup> of the healthy fodder requirement per day. As per estimates, the country's pastures have reduced from about 70 million ha in 1947 to just above 38 million in 1997 (NITI Ayog, 2011). Conservation of natural fodder resources like pasture lands should be encouraged.
- 3.4. **Research level:** There are no. of fodder varieties, pasture land management techniques, agroclimatic zone wise fodder production techniques, cropping sequences etc. evolved by the Universities (AAU, KVK) etc. which are to be brought to the achievement of the grass root level users, hence, requirement of common terms of collaboration between institutes/department & researchers (AAU) calls for a suitable fodder policy in the State.

### 4. Present fodder development scenario of the State:

- 4.1. **Traditional Farming system:** Out of the total cultivable cropped area of the State only a negligible area at present is available for fodder cultivation. This is because farmers of the State are not yet aware or concerned about the necessity of quality fodder for their livestock; they are still governed by the traditional thoughts & methods of livestock rearing. There is a need to change their outlooks from traditional farming to a modern, scientific & commercialized farming in order to optimum utilization of resources, time, energy & efforts.
- 4.2. **Natural vegetation as source of fodder:** Assam is such a State which is covered by green vegetation almost round the year and farmers rear their animals traditionally using this vegetation along with crop residues, mainly straws left in the rice fields. However, due to shrinkage of areas covered with vegetation in the inhabited localities such vegetation are no more easily available now-a-days. It has become costly affair to collect such vegetations & transport them to the needy areas. It requires extra efforts & energy. Moreover, there is still a question mark regarding nutritional value as compared to the tested & highly nutritious cultivated fodder.
- 4.3. **Crop residues:** Crop residues, which is mainly rice straw used as fodder in the State contains minimum nutrition but high fibre, they cannot keep the animals productive for long duration and quality production cannot be expected feeding only straws. Hence, rice straw cannot be a sole source of fodder, it is merely an alternative source of fodder and can be useful only after enriching with other essential inputs like urea, molasses etc.



- 4.4. Increased demand for milk & its products:** With passing of time dairy sector of the State getting momentum due increased demand for milk & other dairy products. Shifting of feeding habit of the people of the State is yet another reason for the increased demand for these items. Farming with cross bred animals may be sole solution to meet up the upcoming needs. State government has introduced various measures to increase popularity & population of cross bred animals with high productivity among the common farmers of the State. However, the livestock sector could survive & progress only when there is availability of green fodder in requisite quantity round the year. Along with every scheme on livestock rearing introduced by the Government, there should be a parallel provision for fodder production & supply to such animals so as for proper implementation & success as desired.
- 4.5. Departmental initiatives:** Government has introduced various measures in order to increase quality green fodder production in the state in order to feed the increasing cross bred population of the state but these prove to be insufficient in absence of a comprehensive state fodder development policy which is an urgent call of the day.
- 4.6. Area under fodder cultivation:** There is a need in the State to bring more and more areas under fodder cultivation which may be perennial or seasonal both *rabi* & *kharif*. Various kinds of fodder should be cultivated intensively with recommended varieties exploiting the available resources & climate within the area.
- 4.7. Potential areas for fodder cultivation:** There are many kinds of potential areas within the State which may be brought under fodder cultivation introducing suitable fodder development/cultivation schemes; these areas may be waste lands at the disposal of the Government, forest lands, community land, water shed areas, avenue parking, areas by the sides of the railway tracks, ponds etc.
- 4.8. Taking up with Agri/Horti department:** Measures may be taken by the Government to introduce fodder crops within the annual crop cycle of agriculture. Farmers may be motivated to cultivate high yielding green fodder in their crop field for feeding their own animals. Intercropping/mix cropping with fodder varieties shall be encouraged. Measures may be taken by the Horticulture Department to cultivate fodder with suitable varieties within the groves/orchards.
- 4.9. Production & productivity of livestock:** The crisis for fodder in the State is mainly for the cross bred population. Although indigenous breeds of animal could survive on locally available vegetation & crop residues, now a days it has been recognized that they too, require highly nutritious cultivated green fodder in order to exploit their potentiality upto optimum level.
- 4.10. Introduction, development & strengthening of suitable extension system:** Again, there is a need in State to educate the potential dairy farmers regarding the necessity of cultivated fodder & modern scientific cultivation techniques of fodder cultivation. Extension system within the department should be strengthen for this purpose.
- 4.11. Institutional co-ordination:** Co-ordination within the various sectors within the Department and also with other Departments, Agriculture Universities (AAU – Assam Agricultural University) yet another point of emphasis for successful implementation of any scheme including the fodder development schemes, hence, there is a need to set up terms for inter & intra departmental co ordination aspects.
- 4.12. Utilization of Departmental lands:** There is also a need to bring all potential lands under the Department mainly to reduce the fodder shortage within the State and also to stop land lose of the Department by the way of encroachment by insurgent groups, occupation by other government departments etc. endangered lands under the Department may immediately be utilized, and one such productive measure is to cultivate fodder in massive ways in such areas.
- 4.13. Fodder Production & Demonstration Farm:** Right now the Department has only five nos. of Fodder Production & demonstration Farms for the entire State whereas there is a need for establishment of such a farm in every district so as to made available green fodder, planting material/saplings round the year at reasonable rate to the needy farmers. It is also essential because during flood these farms may make available fodder to the District Administration for distribution in the affected areas. These Farms shall be established with all facilities, arrangement etc, necessary for fodder production, storage, conservation, transportation etc.



1. Fodder Demonstration Farm, Sariatoli, Nalbari
  2. Fodder Demonstration Farm, Sonapur, Kamrup (M)
  3. Fodder Demonstration Farm, Barbarijhar, Barpeta
  4. Regional Fodder Seed Production Farm, Matia, Goalpara
  5. Fodder Demonstration Farm, Manja, Karbi Anglong
- 4.14. Farm mechanization:** All the farms/institutes under the department having cultivable land shall be brought under fodder cultivation providing all necessary requisites like, fencing, boring etc. they shall be mechanized in all respects so as to cultivate fodder round the year to feed the animals of the farm & also to make available green fodder/saplings to the needy farmers at reasonable rates as & when necessity arises.
- 4.15. Creation of suitable marketing system:** Presently there is no any organized/regulated marketing system of fodder at any region of the State. Due to this fact production, distribution & marketing of fodder within the State is not even; there is wastage where fodder is produced in abundance whereas farmers are not getting fodder at adequate quantity where there is need. Hence, it is a potential aspect to create a suitable marketing system in organized manner which would not only systematize production & distribution of green fodder but also provide scope for income generation for rural youths.
- 4.16. Creation & strengthening of evaluation & monitoring of fodder development activities:** Yet another reason for improper assessment of the farm produce / productivity is due to lack of a proper monitoring and evaluation methodology which led to failure of proper activity of the farm. A consolidated M&E process need to be installed / initiated for proper recording of the farm activities.
- 4.17. Arrangement for local transportation:** Only production of green fodder in massive way in State will not mitigate the problem fodder shortage of the State, parallel provisions shall be there for immediate transportation of the fresh produce to the needy areas. Provisions shall also be there for the excess & unutilized produce for future uses. Hence, there is a need to make provisions for suitable storage of these produces for longer periods. Establishment of Fodder Banks may be a suitable solution for this purpose.
- 4.18. Post harvest management/storage etc.:** & Management & processing of excessive & surplus produce is yet another important aspect of fodder cultivation. Suitable measures of storing & processing of fodder shall be introduced & popularized among the stakeholders by the Department in effective ways.
- 4.19. Transportation of surplus via railway:** There is also a need to regulate the transportation of surplus fodder from the State to other fodder deficit areas of the country for the purpose of income & employment generation within the State. State may take steps to recognize important fodder varieties within state & also the entire North East region, collect them & export to those needy areas & it may be an innovative step for engaging unemployed rural youths & generate income. A suitable arrangement using the advantage of the railway network may be an appropriate solution.
- 4.20. Local fodder varieties:** The Department should endeavour to locate, recognize and produce location specific (Agro Climatic zone wise) suitable, highly nutritious alternate fodder varieties like *azolla* etc. in collaboration with the concerned universities (AAU) for addressing fodder shortage vis-à-vis for utilization & distribution during lean & stress periods.
- 4.21. Importance/attention on Fodder Development by the Government:** Among all, fund allocation for carrying out different fodder activities being the foremost problem which may be mitigated by the Government giving due weightage & importance to this sector. The Government may make provisions for free flow of Funds under its various banners for this specific sector.
- 4.22. Creation of Fodder Development Agency:** The Government may also initiate steps for reorganization & establishment of Fodder Development as a distinct & independent agency of the Department with its own establishment along with all other set ups like separate office building, staff & official hierarchy.
- 4.23. Necessity for separate Regional Fodder Research Centre:** Assam is the centre of the entire North East region; it is also the door way of this region. And the entire region of North East is full of natural vegetation round the year of innumerable species, some of which are very rare; its climatic conditions are not too extreme and also congenial for crop growth, lands too are fertile. These climatic & land conditions indicate that this particular region requires a Regional Fodder Research Centre to be established specifically for



this region and the State of Assam is the most potential area for this purpose due its geographical position, infrastructure facility & others etc.

- 4.24. Cultivation inputs/ seed:** Besides, this sector of fodder development is facing challenges like non availability of high yielding variety seeds, suitable land for fodder cultivation, high cultivation cost due to high cost of inputs, lack of awareness regarding necessity and modern technologies of fodder cultivation among the growers etc.
- 4.25. Non availability of fodder seed:** In order to address the fodder shortage situation in the State, to remove all hindrances interfering in carrying out fodder development activities, for smooth functioning of this sector as well as to achieve all the aims/objectives both short term & long term, a suitable policy on fodder development is direly required by the Department at present.
- 4.26. Fodder block making unit:** The Department not yet could establish a fodder block making unit in the State. However, being a flood prone region it requires such units due the advantages of fodder blocks for distribution in the affected areas over the disadvantaged of wheat bran, rice straw etc.

It is necessary to establish mini fodder block making units especially within the rice belt of the State so as to convert rice straw into valuable fodder blocks fortifying by appropriate formulations which otherwise contains minimum nutrition although high fibre through PPP mode with 50% subsidy. Conversion into fodder blocks is also necessary for easy & long storage life within minimum space.

Another reason for using blocks that, it is easy to handle fodder blocks which takes minimum space than the raw straw while transporting from a place to another.

#### 5. Some of the major challenges facing by the Fodder Development Sector while implementing the schemes undertaken:

The Department, since its inception has been implementating fodder development activities, however at small scale and not at full flagged commercial basis. Fodder so produced fed to the institutional animals & animals of the farmers of the vicinity of the institution.

During last ten years the Department has implemented the following projects under various banners sponsored either by the Central or the State Government:

Year	Name of scheme	Central/ State	Amt. sanctioned (Rs. In Lakh)	No. of beneficiary	Achievement (approx.)
2007-08	Grassland Development including Grass Reserves	Central, CSS	85.00	1000 (@ 100/unit for 10 units)	2, 52, 000 MT
2008-09	Fodder Seed Distribution	Central RKVY	249.33	33100	86, 450 MT
	Establishment of Community Pasture			56	
	Mixed Fodder Demonstration			900	
	Fertilization of Departmental Farms			Covered 5 nos. of fodder farms	completed
	Tractorization of Fodder Farms			Covered 5 nos. of fodder farms	completed
2009-10	No fund sanctioned under any Banner of either Governments				
2010-11	Fodder Seed Distribution	Central RKVY	594.00	51, 692	26, 880 MT
2011-12	Fodder Seed Distribution	Central RKVY	360.00	34, 487	17, 703.32 MT
	Grassland Development including Grass Reserves	Central, CSS	210.00	2100 (@ 100/unit for 21units)	2, 35, 200 MT



2012-13	Fodder Seed Distribution	Central RKVY	400.00	43,000	1,29,000 MT
	Fodder Cultivation at Departmental Institutes	State, SOPD	40.00	2,000	65,432.19 MT
2013-14	Fodder Seed Distribution	Central RKVY	79.80	10,000	45,520.44 MT
	Multicut Hybrid Bajra		300.00	864 high farm lands of 96 institutes	15,552
2014-15	No fund sanctioned under any Banner of either Governments				
2015-16	No fund sanctioned under any Banner of either Governments				
2016-17	No fund sanctioned under any Banner of either Governments				
2018-19	Rs. .... has been san.....				

**(N.B. Production Reports compiled & prepared on the Reports submitted by the DVOs & are not exhaustive.)**

On analyzing the implementation of the above Schemes the Department has faced the following major challenges which are to be mitigated immediately for successful & productive implementation of the schemes upto the level of potentiality which are to be undertaken within coming years:

- 5.1 **Fund flow:** It is to be noted that the flow of Funds is the most conspicuous problem which is of foremost importance to be recognized by the Government. Only a negligible nos. of needy farmers & areas could be covered by the Funds recently receiving by the Department from the either Governments. Whereas huge amount of fund is required yearly for production of green fodder vis-à-vis to carry out other ancillary fodder developmental activities. The State Government may reserve a sizable amount in its annual budget for carrying fodder development activities.
- 5.2 **Few schemes in a financial year:** The Department could implement only one or few schemes during a financial year mainly due to the above mentioned reason. Whereas there is a need to initiate several projects on different fodder cultivation activities in a year in order to mitigate the ever increasing fodder shortage.
- 5.3 **Less area coverage:** Till date, the Department could cover a little area of the Department & private farmers' field due to the fact as stated above. There is a need to bring more & more institutional lands & the lands of needy farmers by introducing suitable fodder development projects.
- 5.4 **Less no. of beneficiary involvement:** Again due to above reasons the Department could involve & extend benefits to a negligible no. of beneficiaries within the State.
- 5.5 **Necessity for more no. of beneficiary oriented schemes:** It is the need of the time to introduce more no. of beneficiary oriented income generating fodder development schemes through PPP mode. Along with green fodder production these may also ensure farmers' interest & involvement due to income generation.
- 5.6 **Necessity for schemes creating awareness/capacity building/training/adoption:** it has been found that most of the ultimate beneficiaries are not aware about the Governmental projects launched to render benefit to them only due to insufficient publicity; hence there is a need for wide publicity of the schemes well before they are launched. There is also need to introduce training programmers for their skill development & capacity building on aspects related to fodder cultivation. This way adoption of fodder cultivation by the grass root level farmers may be increased & ensure. It would also be beneficial to arrange farmers' fair in every region where to exhibit fodder cultivation inputs like HYV seeds/saplings, fertilizers, equipments etc. & also to distribute sample of HYV seeds/saplings free of cost to the needy & interested farmers.
- 5.7 **Schemes on latest technologies & cultivation methods practices (hydroponics):** Due to various reasons, land availability for fodder cultivation is far more less than necessity. Hence, for intensive fodder production, there must be a shift from traditional methods to latest methods technologies where minimum land area is required for cultivation like hydroponics. This technology requires lesser amount of inputs to produce more quantity within a short duration. Moreover, once installed, harvesting may be possible round the year.



- 5.8 Absence of schemes on alternate fodder like *Azolla* (*Saru puni*):** From researches, it has been found that *Azolla* (*Saru puni*) is very nutritious fodder and could be fed to all kind of farm animals & birds. It is very fast growing with short harvesting intervals. It requires minimum space, inputs etc. for production; it could also be grown all kinds of standing ware bodies. It could be a suitable alternate fodder and also to prepare feed formulations for all kinds farm birds & animals.
- 5.9 Introduction of silvi pasture:** Silvi pasture is not at all common anywhere in the State. However, in order to address the ever increasing fodder shortage, departmental schemes on silvi pasture development may prove to be beneficial. This may be established in community lands, village fringed forest lands, waste land etc. Local fodder trees like mango tree, jackfruit tree, subabul etc. along with perennial fodder grasses like, napier, guinea, para etc. may be used for developing silvi pastures in the State under departmental initiatives.
- 5.10 Lack of awareness on post harvest management:** it has been noticed that in areas where there is surplus fodder, it is wasted due to over maturity; this is because of ignorance vis-à-vis lack of knowledge & awareness of the users. Hence, there is a need to educate the users on post harvest management of green fodder. This may include harvesting as per need, preservation & conservation of green fodder by way of making hay, silage etc.
- 5.11 Strengthening of supervision, monitoring & reporting of the ongoing schemes:** There is a need for strengthening of the present system of supervision, monitoring & reporting of the ongoing schemes. Arrangements should be made for adequate funds & requisite facilities of all kinds for this purpose because these are essential for successful implementation of the projects and give basis for modification for future implementation.
- 5.12 Modernization & Mechanization of the farms for holding every kind of fodder development schemes:** There is also a necessity to all-round development and mechanization of the fodder farms & other departmental institutions which will be proposed to be brought under fodder cultivation should be modernized by creating all sorts of facilities, developing infrastructures & completely mechanized so that they could be capable to hold schemes of any length, duration & intensity.
- 5.13 Necessity of organized marketing system:** Another factor challenging the success of the schemes implemented earlier is the lack of an assured & systematic regulated market for marketing the produce. Hence, there is an urgent need to initiate action by the Government in this particular field in a prompt & systematic manner.
- 5.14 Necessity & implementation of schemes to cover stress period especially flood:** The State is a flood prone one, annually heavy flood submerges the river basins of Brahmaputra & Borak Valley. Fodder shortage is acute during this period. The Department along with District administration has to make arrangements for distribution of green fodder to the affected areas. The Department is under the responsibility to provide green fodder from the fodder farms. Hence, there is a necessity of schemes which will be implemented specially within flood affected districts in high land areas not submerged by flood water.
- 6. Policy objectives:**
- 6.1** To increase production of quality green fodder in massive amount.
- 6.2** To increase amount of land under fodder cultivation by way of encouraging farmers to spare land for fodder cultivation, holding demonstration at their fields, bringing unconventional lands like village infringed forest land , waste land, community land, lands at the sides of railway tracks, avenue parking with fodder etc. under fodder cultivation.
- 6.3** To bring maximum institutional land under fodder cultivation in order to meet up gap between demand & supply of fodder production, protect farm lands from encroachment etc. & to supply fodder during necessity periods & flood affected areas.
- 6.4** To educate the farmers of the State about the exotic, high yielding hybrid fodder varieties & modern cultivation techniques and also to popularize them using multifarious extension techniques including use of multi media in intensive ways.
- 6.5** To make available costly fodder cultivation inputs like high yielding variety seed, fertilizers etc. completely free of cost to the BPL farmers & at reasonable subsidized rate to other farmers.



- 6.6 To create SHG groups so as to accomplish fodder cultivation & related activities through PPP mode with special emphasis on women folks.
- 6.7 To make provisions in the departmental farms to produce quality seed for distribution to the needy farmers of the State, thereby to reduce cost production of fodder.
- 6.8 To encourage private farmers/other agencies to take up fodder seed production schemes with buy back arrangements under NLM.
- 6.9 To initiate steps to create linkage between research works at institutional level & their application/ utilization at the grass root level, the actual users.
- 6.10 To initiate steps to conserve pasture lands and other natural resources of fodder.
- 6.11 To develop and utilize the alternate sources of fodder for better nutrition during lean & stress periods like *azolla*, water hyacinth etc.
- 6.12 To develop appropriate action plan:
  - a. to stop wastage of crop residues by way of burning or otherwise,
  - b. to evolve region specific suitable preservation techniques
  - c. to convert & conserve crop residues into nutritious fodder by making hay, silage & by way of enriching with other inputs like urea, molasses etc.
- 6.13 To establish fodder banks in every district for storage, preservation & conservation of fodder so that fodder could be made available round the as & when necessity arises.
- 6.14 To establish mini fodder block making units especially within the rice belt of the State so as to convert rice straw into valuable fodder blocks fortifying by appropriate formulations which otherwise contains minimum nutrition although high fibre through PPP mode with 50% subsidy.
- 6.15 To publish leaflets/handouts on importance/necessity of modern fodder cultivation techniques & to distribute among the stakeholders.
- 6.16 To establish silvi pastures in suitable places under the auspices of the Government.
- 6.17 To establish Fodder Demonstration Farms in every district so that services & inputs under this sector are available readily to the farmers of the respective district.

#### 7. Policy Term:

The Policy shall be operative for ten years its term may be extended if deemed necessary by the Government to any length.

#### 8. Amendment:

The Policy may be amended (addition, deletion, modification) as & when necessary by the government.

#### 9. Vision:

The Vision of the Policy are:

1. To address the acute fodder shortage within the State ie. to minimize the gap between demand & supply of cultivated nutritious quality fodder.
2. To make the State a fodder surplus one so that it can export the surplus fodder to the deficit regions of the country, this will add to the economy of the State.
3. To generate employment for the rural unemployed youths.

#### 10. Mission & Strategy

1. Ensure the availability of fodder round the year & during flood & other emergency situations in the State.
2. Enhancement of Production and Preservation of Fodder by Adoption of appropriate technologies.



3. Post-Harvest Management to optimally utilize suitable agro-ecological conditions in the state.
4. Creation of fodder banks / storage facilities in partnership with user groups and private farmers.
5. Reduction of production costs by producing costly inputs like quality seed within the State.
6. Put in place appropriate mechanisms to ensure that the sector becomes self sustainable.
7. Create a suitable environment that can attract private sector investment through an appropriate policy support.
8. Due to non availability of cultivable land for fodder cultivation : farmers of the state are usually reluctant to spare such lands for the fodder cultivation because they are more inclined towards agricultural cash crops. The department could implement its schemes at farmers field only after harvesting of *Sali* rice, when the field is lying vacant.

Suitable cropping pattern of fodder cultivation may be introduced by which without interfering their normal practice of growing agricultural cash crops fodder may also be grown parallel. For example, intercropping with fodder legumes like rice bean, cow pea etc.

9. Due to poor economic condition of farmers of the state, they cannot afford high yielding inputs like seeds, fertilizers which are very costly.

Departmental policy of seed distribution was seized since 2013-14

10. Due to non availability of high yielding variety fodder seed in state as such seeds are not produced in the state in present.
11. Lack of awareness regarding necessity & utility of fodder cultivation using up to date scientific technologies.

Adoption of technologies may be achieved by strengthening the existing extension system of Department & using multi media publicity.

12. Poor and unorganized marketing system for marketing fodder in the state.

The Department may initiate action for developing a suitable marketing system in organised manner for fodder cultivated by the Department & at the farmers field.

13. Departmental lands are not adequately utilized due to lack of funds and infrastructure.
14. Potential lands which may be available for fodder cultivation like community land, govt. Waste land, grazing land & other lands at the disposal of the Govt. Could not be brought under cultivation due to various reasons including fund etc.

Such land may be brought under various scheme/project of the department for proper utilisation on fodder production by involving civil authorities.

15. There is information gap among beneficiaries due to insufficient publicity of Govt. Schemes which may be rectified either by strengthening the existing system or by developing necessary resources / amenities for proper supervision & monitoring.
16. Co-ordination gap within the system may be minimized by channelizing requisite funds & other necessary resources / amenities for proper supervision & monitoring.
17. In order to ensure cent percent implementation of schemes & success thereof, these must be developed on analysis of demands of the ultimate beneficiaries. In other words, schemes etc. Must not be imposed on the beneficiaries without taking into account their actual need of the farmers.

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ANIMAL HUSBANDRY  
& VETERINARY DEPARTMENT  
Government of Assam

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