**34**

**STANDING COMMITTEE ON AGRICULTURE**
**(2016-2017)**

**SIXTEENTH LOK SABHA**

**MINISTRY OF AGRICULTURE AND FARMERS WELFARE**
**(DEPARTMENT OF ANIMAL HUSBANDRY, DAIRYING AND FISHERIES)**

# "Steps taken to Bridge the Gap Between the Demand and Availability of Fodder Through Sub-Mission On Fodder and Feed Development"

**THIRTY FOURTH REPORT**


**LOK SABHA SECRETARIAT**
**NEW DELHI**

DECEMBER 2016/Agrahayana,1938 (Saka)

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## MINISTRY OF AGRICULTURE AND FARMERS WELFARE
## (DEPARTMENT OF ANIMAL HUSBANDRY, DAIRYING AND FISHERIES)

## "Steps taken to Bridge the Gap Between the Demand and Availability of Fodder Through Sub-Mission On Fodder and Feed Development"


| | |
|---|---|
| Presented to Lok Sabha on | 15.12.2016 |
| Laid on the Table of Rajya Sabha on | 15.12.2016 |




**LOK SABHA SECRETARIAT**
**NEW DELHI**

**DECEMBER 2016/Agrahayana, 1938 (Saka)**

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## <CONTENTS>

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## INTRODUCTION

I, the Chairperson, Standing Committee on Agriculture (2016-17), having been authorized by the Committee to submit the Report on their behalf, present this Thirty Fourth Report (Sixteenth Lok Sabha) on the subject 'Steps Taken to Bridge the Gap Between the Demand and Availability of Fodder Through Sub-Mission on Fodder and Feed Development' pertaining to the Ministry of Agriculture (Department of Animal Husbandry, Dairying and Fisheries).

2. The Committee took evidence of the representatives of the Ministry of Agriculture and Farmers Welfare (Department of Animal Husbandry, Dairying and Fisheries) on the subject at their Sitting held on 23.08.2016.

3. The Report was considered and adopted by the Committee at their Sitting held on 09.12.2016.

4. For facility of reference, the Observations / Recommendations of the Committee have been printed in bold at Part - II of the Report.

5. The Committee wish to express their thanks to the representatives of the Ministry of Agriculture and Farmers Welfare (Department of Animal Husbandry, Dairying and Fisheries) for furnishing requisite information to the Committee in connection with examination of the subject.

6. The Committee would also like to place on record their deep sense of appreciation for the invaluable assistance rendered to them by the officials of Lok Sabha Secretariat attached to the Committee.

**NEW DELHI;**
**08 December, 2016**
**17 Agrahayana, 1938 (Saka)**

**HUKM DEO NARAYAN YADAV**
***Chairperson,***
***Standing Committee on Agriculture***

# REPORT

## PART - I

## CHAPTER - I

### Introductory

1.1 The Department of Animal Husbandry, Dairying and Fisheries is one of the Departments under the Ministry of Agriculture and Farmers Welfare. It came into existence on February 1, 1991 by merger of two Divisions of the Department of Agriculture and Cooperation viz. Animal Husbandry and Dairy Development into a separate Department. The Fisheries Division of the Department of Agriculture & Cooperation and a part of the Ministry of Food Processing Industries was later transferred to this Department on October 10, 1997.

1.2 The Department is responsible for matters relating to livestock production, preservation, protection & improvement of stocks, dairy development and matters relating to Delhi Milk Scheme and the National Dairy Development Board. It also looks after all matters pertaining fisheries, which includes inland and marine sectors and matters related to the National Fisheries Development Board.

1.3 The Department advises the State Governments/ Union Territories in the formulation of policies and programmes in the field of animal husbandry, dairy development and fisheries. The main focus of the activities is on (a) Development of requisite infrastructure in States / UTs for improving animal productivity; (b) Promoting infrastructure for handling, processing and marketing of milk and milk products; (c) Preservation and protection of livestock through provision of health care; (d) Strengthening of central Livestock farms (Cattle, Sheep and Poultry) for development of superior germplasm for distribution to States; and (e) Expansion of aquaculture in fresh

and brackish water, development of marine fisheries infrastructure & post harvest operations and welfare of fisherfolk, etc.

1.4 The nutritive value of feed and fodder has a significant bearing on productivity of livestock. The major reasons for shortage of feed and fodder are, increasing pressure on land for growing food grains, oil seeds and pulses, adequate attention has not been given to the production of fodder crops. Further, on account of diversified use of agricultural residues, the grazing lands are gradually diminishing. The area under fodder cultivation is also limited. Majority of the grazing lands have either been degraded or encroached upon restricting their availability for livestock grazing. The area under fodder cultivation is only about 4% of the cropping area, and it has remained static for a long period of time. Owing to the importance of food crops and other cash crops, it is very unlikely that the area under fodder cultivation would increase substantially.

1.5 Though the availability of feed and fodder has improved in the last decade, still a lot is required to be done to bridge the gap between the demand and availability of fodder in the county, particularly during the lean periods and crisis situations.

1.6 To overcome the shortage of feed and fodder and to improve the nutritive value, this Department has included a Sub-Mission on Fodder and Feed Development in the National Livestock Mission from 2014-15 onwards.

## CHAPTER - II

## SCHEMATIC ANALYSIS

### (i) National Livestock Mission :

2.1 For sustainable and continuous growth of livestock sector, the National Livestock Mission (NLM) was launched in 2014-15 with the objectives of sustainable development of livestock sector, focusing on improving availability of quality feed and fodder, risk coverage, effective extension, improved flow of credit and organization of livestock farmers / rearers, etc. with the following four Sub-Missions :

I. Sub-Mission on Livestock Development,
II. Sub-Mission on Pig Development in North Eastern Region,
III. Sub-Mission on Fodder and Feed Development,
IV. Sub-Mission on Skill Development, Technology Transfer and Extension.

2.2 The National Livestock Mission (NLM) has been launched in 2014-15 with an approved outlay of Rs. 2,800 crore during XII Plan as per the following details:

(Rs. in Crore)

| S. No | Components (sub-mission) | 2013-14 | 2014-15 | 2015-16 | 2016-17 | Total |
|---|---|---|---|---|---|---|
| A | Livestock Development | 349.00 | 431.00 | 467.00 | 513.00 | 1760.00 |
| B | Pig Development in North-eastern Region | 11.50 | 17.50 | 20.50 | 25.50 | 765.00 |
| C | Fodder and Feed Development | 96.00 | 111.00 | 121.00 | 137.00 | 465.00 |
| D | Skill Development, Technology Transfer and Extension | 111.00 | 119.50 | 128.00 | 141.50 | 500.00 |
| | Total | 567.50 | 679.00 | 736.50 | 817.00 | 2800.00 |

2.3 On being asked about the actual allocations for the National Livestock Mission, the Department in its written reply stated as under :

> "The actual budget allocation for National Livestock Mission for **2014-15** was Rs **273.00** crore against the approved outlay of Rs **679.00** crore and the actual budget allocation for National Livestock Mission for **2015-16** was Rs **106.37** crore against the approved outlay of Rs **736.50** crore. Therefore, the allocations have been lower due to less budget allocation. The allocation for National Livestock Mission for **2016-17** is Rs **292.00** crore against the approved outlay of Rs **817.00** crore. The funds released under the Sub Mission Fodder and Feed Development during 2014-15 and 2015-16 have been utilized."

2.4 On being asked whether lesser allocation against an approved outlay has hampered the implementation of the Sub Mission, the Department replied as under:

> "Yes, the implementation of the Sub Mission has been hampered by the less allocation of funds as against the approved outlay."

2.5 On being questioned about the plan of the Department to meet the physical targets and objectives of the Sub Mission with such an acute reduction in allocated funds, the Department submitted in writing as under :

> "Due to acute reduction in the funds physical targets have been modified to the extent the available budget."

2.6 The BE and RE of National Livestock Mission is as under :

(Rs. in crore)

| **Year** | **BE** | **RE** |
|---|---|---|
| 2014-15 | 273.00 | 272.28 |
| 2015-16 | 106.37 | 102.22 |

No separate allocation are given for sub-missions.

2.7 During the course of briefing on 02.06.2016, the Secretary of the Department briefed the Committee as under :

"Sir, here I would like to say one important thing that it depends upon the State Government as to which of the four Sub Missions of the National Livestock Mission, they would like to stress upon. Therefore, the development of fodder actually depends upon the needs of the State Government. We, the Centre, do not impose anything on them."

2.8 On being asked about the basis for allocation of funds to different schemes and Sub Missions under the NLM, the Department in its written reply stated as under:

"Sub Missions have not been allocated funds separately. The States/ UTs are given tentative allocation of funds as per the budget in the beginning of the financial year and accordingly they submit the proposals as per their requirement which are further examined by the Department as per the existing guidelines of National Livestock Mission and funds are then released to States/ UTs. During 2015-16 allocation could not be made due to very low allocation and budget of 2015-16 was used to meet previous year liability."

2.9 The State-wise allocations for Centrally Sponsored Schemes of NLM for the year 2014-15 and 2016-17 are given in **Annexure I.**

**(ii) <u>Sub-Mission on Fodder and Feed Development :</u>**

2.10 To overcome the shortage of feed and fodder and to improve the nutritive value, this Department is implementing the Sub-Mission on Fodder and Feed Development. It is to mention that India with only 2.29% of the land area of the world, is maintaining about 10.71% of the livestock population of the world.

2.11 The approved outlay and actual allocation of the Sub Mission on Fodder and Feed Development under the NLM are as follows :

(Rs. in crore)

| | APPROVED OUTLAY | ACTUAL ALLOCATION |
|---|---|---|
| 2014-15 | 111.00 | 47.68 |
| 2015-16 | 121.00 | 16.85 |
| 2016-17 | 137.00 | - |

2.12 When asked about the details of the physical targets under the Sub Mission and how does the Department plan to meet the same, the Department in its written reply stated as under:

> "The physical targets as were proposed under Submission of Feed and Fodder Development of National Livestock Mission as per the outlay proposed is given at **Annexure II**. The actual budget allocations are very low for achieving these targets."

2.13 On being questioned about implications of drastically reduced actual allocation on implementation and physical targets of the Sub Mission and steps taken by the Department to minimize the impact due to this, the Department in its written reply stated as under :

> " The achievement of targets have been very low."

**(iii) <u>Regional Fodder Stations under NLM :</u>**

2.14 Under the National Livestock Mission there are Eight Regional Fodder Stations which are located in different agro-climatic zones of the country with the following objectives :

a) Introduction of fodder crops in existing crop rotation.
b) Demonstration of superior package of practices for use of fertilizers, water and soil management in production of cultivated fodder crops, studies of these practices with regards to new and promising species of fodder crops and grasses.
c) Evolution of fodder calendars suitable to the region.
d) Demonstration for improvement and management of village grazing land and natural grassland and study their proper utilization in combination with forage crops.
e) Demonstration of different methods of fodder conservation and utilization.
f) Production of high quality foundation seeds of forage crops for further multiplication and distribution.

g) Conducting training programmes to educate State Government officials and dairy farmers.

h) Organizing farmers' fair / field days.

2.15 The Eight Regional Fodder Stations (RFS) are at Hessarghatta, Bengaluru (Karnataka), Mamidipally, Hyderabad (Telangana), Dhamrod Surat (Gujarat), Hisar (Haryana), Suratgarh (Rajasthan), Suhama (Jammu & Kashmir), Alamadhi (Tamil Nadu) and Kalyani (West Bengal).

2.16 These stations have produced 255 tonnes of Fodder seeds, conducted 8500 demonstrations, and organized 135 training programmes and 135 farmers' fairs/field days, during this financial year till December,2015.

2.17 The Stations produce specific foundation seeds for States/UTs. Despite sustained efforts by the Department the States/UTs are not interested in purchasing the seeds from the Regional Fodder Stations of the Department, though, the States/UTs purchase and utilize a large quantity of seeds under their own fodder development programmes. The Government of India even gives funds for purchase of seeds under Fodder Seed Procurement/ Production & Distribution component of Sub-Mission on Fodder and Feed Development. The availability of seeds at the RFS and the quantity purchased by the various States since April, 2016 onwards is placed at **Annexure III.**

2.18 During the course of briefing on 02.06.2016, the representative of the Department stated as under :

> "…. The Department is working with Indian Grassland and Fodder Research Institute (IGFRI) on grasslands and with National Institute of Animal Nutrition and Physiology (NIANP), which is in Bengaluru, on Rhode Grass, Stylo grass, Napier, Guinea, Synchrous Grass etc. In this seeds of these are only available with us. Besides, we also produce seeds which we take from IGFRI and give to the farmers. Silage making which you have said, is a very old technology, but we now

use plastic bags which do not require digging into the ground. There are new methodologies which are being worked upon and Haryana and Punjab are picking this up very fast."

2.19 On being questioned about the steps being taken by the Department to impress upon States and UTs to go for purchasing specific foundation seeds produced by the Regional Fodder Stations (RFS) and to curb the wastage of resources thus caused, the Department in its written reply stated as under:

"This has been ensured in the guidelines itself. Annexure-C-III of Operational Guidelines of National Livestock Mission mentions it as given below -

"The State Govts. will assess the requirement of fodder seeds of the State & procure foundation seeds of desired varieties from the Regional Fodder Stations (RFS) of GOI and thereafter if seeds are not available with RFS then same can be procured from Universities, NSC, SFCI and Research Institutes of ICAR. States will further multiply these seeds through farmers, Department of Animal Husbandry/ Agriculture, SHGs, Government Corporations, Milk Cooperatives/ Federation / Central and State Agriculture or Veterinary Colleges / Universities and may enter into a buy back arrangement of fodder seeds produced by these agencies for preparation of mini-kits for further distribution among the farmers for fodder production, thereby passing the Central subsidy to the farmers. Only certified seeds will be distributed to the farmers, alternatively the States may make an agreement with seed supplying agencies (excluding Private Entrepreneurs) for supply of fodder seeds inclusive of transportation cost up to delivery point of mini-kits. "

2.20 On being enquired as to whether there is any proposal under consideration to set up more Regional Fodder Stations as Uttar Pradesh and Bihar do not have such a Station, the Department in its written reply stated as under :

" No, Uttar Pradesh is covered by RFS Hisar and Bihar is covered by RFS Kalyani."

**(iv) Release of funds to the States and UTs and their utilization :**

2.21 On being asked about the State-wise expenditure incurred by the States and UTs during implementation of schemes under the Sub Mission on Fodder and Feed Development, the Department in its written reply stated as under:

> "The funds provided to States by the Department under the Sub Mission on Fodder and Feed Development are given in **Annexure IV.** The States provide matching grants as per the sharing pattern fixed by the Government of India."

**(v) Funding pattern, assistance and implementation:**

2.22 State Governments have been given liberty to choose the development of any or all the sectors mentioned in the four Sub-Missions of NLM, with a restriction of availability of budget with the Department. The scheme of a State/ UT for all the four Sub-Missions including Sub-Mission on Fodder and Feed Development is approved by State Level Executive Committee (SLEC) headed by the Chief Secretary. The tentative budget outlay to each State/UT is conveyed in the month of April each year so that they can formulate the plans best suited to their State/ UT. Afterword, the plan is received in the Department and processed for release of budget to the State/UT.

The components of the scheme under Sub Mission on Feed and Fodder Development are enlisted as follows :

| S. No. | Name of the Components |
|---|---|
| 1 | Forage production from Non-forest wasteland / rangeland/ grassland/ non-arable land (ha) |
| 2 | Forage production from Forest Land (ha) |
| 3 | Cultivation of coarse grains and dual purpose crops (ha) |
| 4 | Fodder seed production / procurement and distribution (MT) |
| 5 | Conservation of fodder through post harvest technologies : |
| (i) | Distribution of hand driven chaff cutters (No.) |
| (ii) | Distribution of power driven chaff cutters (No.) |

| | |
|---|---|
| (iii) | Establishment of high capacity Fodder Block Making units (No.) |
| (iv) | Distribution of low capacity, tractor mountable Fodder Block Making units/ Hay Bailing Machine/ Reaper/ Forage Harvester (No.) |
| (v) | Establishment of Silage making units (No.) |
| (vi) | Establishment of Bypass protein / fat making units (No.) |
| (vii) | Establishment of area specific mineral mixture / feed processing units (No.) |
| (viii) | Establishment / modernization of Feed testing laboratories (No.) |

2.23 The funding of the components has been changed vide No.32/PSO/FS 2015 from 28th Oct 2015 to the sharing ratio of 60:40 between the Centre and the States for those schemes for which the Central share is higher. However, for those scheme for which the Central share is 60% or lower the same will continue as per the existing Guidelines. Further, for the eight North-Eastern and three Himalayan States this ratio of sharing between Central and State will be 90:10. It is clarified that in these eight North Eastern States and three Himalayan States for those schemes for which the Central Share was 90% or lower the same will continue as per the existing Guidelines. Similarly for Union territories, the Centrally Sponsored Schemes will be funded 100 percent by the Central Government except for those schemes for which the Central share was lower than 100%, the same will continue as per the existing Guidelines.

2.24 During the course of briefing on 02.06.2016, on the issue of subsidy on chaff cutters, the Secretary of the Department responded as under :

> "I would like to bring to your notice that there is subsidy on power driven chaff cutters. 75% on the manual, which is provided as a share of the Centre, whereas 50% subsidy is on chaff cutters driven with electricity or diesel....."

2.25 On being asked about the steps taken by the Department to raise awareness and willingness among farmers to take up cultivation of coarse grains and dual purpose crops, as is being operated under the National Food Security Mission and to ensure effective

implementation of this component under the scheme, the Department in its written reply stated as under :

> " The Department of Animal Husbandry is having 8 Regional Fodder Stations located in different agro-climatic zones of the country (Srinagar (J&K), Hisar (Haryana), Suratgarh (Rajasthan), Dhamrod (Gujarat), Kalyani (W.B.), Hessarghatta (Karnataka) , Hyderabad (A.P.) & Chennai (Tamil Nadu). These stations conduct field trials of fodder crops and disseminate information about the schemes of the Department including cultivation of coarse grains and dual purpose crops. The guidelines of the schemes are sent to the States/ UTs which further disseminate the information. The guidelines of the schemes are also available on the website of the Department (www.dadf.gov.in)."

2.26 On being questioned about the steps being taken by the Department to ensure that the components covered under the Sub Mission are being implemented effectively in the States and UTs, the Department in is written reply responded as under:

> "This (2016-17) being the third year of the implementation of NLM, the fund allocations have been very low and States/ UTs could not be given sufficient funds or no funds at all for implementation. The States/ UTs are given tentative allocation of funds as per the budget in the beginning of the financial year and accordingly they submit the proposals as per their requirement which are further examined by the Department as per the existing guidelines of National Livestock Mission and funds are then released to States/ UTs."

2.27 On being asked about guidelines or criteria adopted by the Department for releasing of funds to various States / UTs, the Department in its written reply submitted as under:

> "The States / UTs are given tentative allocation of funds as per the budget in the beginning of the financial year and accordingly they submit the proposals as per their requirement which are further examined by the Department as per the existing guidelines of National Livestock Mission and funds are then released to States/ UTs. The tentative allocations for 2014-15 & 2016-17 are given. During 2015-16

allocation could not be made due to very low allocation which were used to meet previous year liability"

2.28 On being questioned about the specific requirements of the States / UTs being considered while releasing funds, the Department in its written reply stated as under**:**

"The proposals are received from States/ UTs as per their requirement which is examined as per the existing guidelines of National Livestock Mission for release of funds."

2.29 On being asked as to whether the State Level Executive Committee (SLEC), responsible for approving schemes of a State/UT under the Sub Mission, conducts any study or survey to ascertain the overall impact of the schemes of the Sub Mission, the Department in its written reply stated as under :

"This being (2016-17) the third year of the implementation of NLM, the funds allocations have been very low and States/ UTs could not be given sufficient funds or no funds at all for implementations. Therefore, the States/ UTs could not be asked to ascertain the overall impact of the schemes of the Sub Mission."

**(vi) Pending Utilization Certificates:**

2.30 During the course of briefing on 02.06.2016, on the issue of pending utilization certificates, the Secretary of the Department responded as under :

"….So far as some of the States have not received any allocation in 2015-16 or no allocation could be made, the main reason was that utilization certificates have not been received. Here, I would like to inform that out of the total budget, utilization certificates worth Rs. 490 crores remain outstanding and an unspent balance of Rs. 810 crores remain with the States. This amount has been carried over the past few years. We have arranged for a special meeting on this matter.

Secondly, where there is no UC and presuming we could have made efforts, but we could not allocate as the budget for 2014-15 was Rs. 273 crore. For whatever reasons, it was reduced for 2015-16 to Rs. 106 crore The allocation was about Rs. 100 crore lesser and thus the States could not be allocated. This year, 2016-17, it is Rs. 292 crore, which is much more than 2014-15.We have shown the

allocations in the chart. We have started a tradition, since the 2nd of May, to have a meeting of the Secretaries of Animal Husbandry, Fisheries and Dairying from all the States, on every third Wednesday. ”

2.31 When asked about the mechanism adopted to ensure proper utilization of allotted funds to the States / UTs and if the Department had taken up the issue of non-utilization and liquidation of pending utilization certificates (UCs) with the States / UTs and the response of the States / UTs on this issue, the Department in its written reply stated as under :

**"**The Secretary (ADF) holds monthly review meetings with Principal Secretary, Animal Husbandry of the States / UTs. Apart from the other issues, utilization of funds and proper implementation of schemes remains the main agenda point. Secretary (ADF) held two rounds of meetings with Principal Secretary, Animal Husbandry of the States/ UTs for utilization of funds and making of Action Plan for year 2016-17 between 21st -30th June, 2016. Besides matters are followed by writing D.O. letters, through video conferences and making phone calls."

**(vii) <u>Central Sector Scheme of Central Fodder Development Organization:</u>**

2.32 The BE and RE of Central Sector Scheme of Central Fodder Development Organization is as under:

(Rs in crores)

| Year | BE | RE | Actual Expenditure |
|---|---|---|---|
| 2014-15 | 13.00 | 10.09 | 9.86 |
| 2015-16 | 4.29 | 8.28 | 7.63 |

2.33 The details of the physical targets and achievements under the scheme are as under:

| Parameters | 2014-15 | | 2015-16 | |
|---|---|---|---|---|
| | Target | Achievement | Target | Achievement |
| Seed Production (Quintals) | 3740 | 6027.3 | 3440 | 3500.77 |
| Fodder Demonstrations (Nos.) | 8000 | 10607 | 8000 | 9685 |
| Trainings (Nos.) | 200 | 186 | 200 | 200 |
| Farmers Fair(Nos.) | 200 | 188 | 200 | 196 |

**(viii) Additional Fodder Development Programme (AFDP) :**

2.34 Crop resides contribute significantly to fodder availability also. Any decline in area under varies crops results in shortage of fodder causing severe hardship to livestock. Substantial gaps already exist in availability of green fodder, dry fodder and concentrates. The situation is likely to worsen in probable rainfall deficit states of Gujarat, Rajasthan, Karnataka, Madhya Pradesh, Andhra Pradesh, Maharashtra, etc. Mitigating this situation would require additional area coverage under fodder and efficient post-harvest management. Accordingly, it is necessary to imitate special measures for enhancing production of fodder during drought conditions.

2.35 The AFDP was formulated with the objective of facilitating adoption of additional interventions for production of fodder for mitigating adverse impact of drought on livestock. The scheme is proposed to be implemented in the districts/blocks declared as drought affected in the country.

2.36 When asked about the details and adoption of special measures for enhancing production of fodder during drought conditions, the Department in their written reply stated as under :

> "Cabinet Committee on Economic Affairs (CCEA) in the meeting held on 12th August, 2015 has approved Additional Fodder Development Programme (AFDP) with an outlay of Rs. 50.00 crore as a sub-scheme of Rashtriya Krishi Vikas Yojna (RKVY) for mitigating adverse impact of drought in drought affected districts/blocks of the country during the year 2015-16 with guidelines in event of drought declaration by the respective States/Districts/Blocks. As per prevailing AFDP Guideline norms, the maximum ceiling is Rs. 3200/ha for individual farmers/Farmers Association/Federation/Cooperatives and NGOs with restriction of 2 ha per beneficiary."
>
> Level of assistance
>
> Farmers in the drought affected districts/blocks are provided assistance @ Rs.3200/- per hectare as per cost norms for a maximum area of two ha per beneficiary for taking up additional production of fodder in these districts/blocks.

Eligible interventions and rate of assistance:

| Sl. No. | Intervention | Approximate Cost (Rs./Ha) | Rate of assistance (Rs. /Ha) |
|---|---|---|---|
| 1. | Fodder Production kit comprising of critical inputs likes seeds of improved varieties/ hybrids, nutrients, plant protection measures etc. | 3200 | 3200 |

The fund allocation during current year (2016-17) is Rs 100.00 crores. The proposals are submitted by the States/ UTs as per the requirement for release of funds.

2.37 needs. The beneficiaries nay be individual farmers, Farmers Producer Organizations, Federations of Cooperatives. In the event of declaration of drought by the State Government, the State Government will implement this scheme as a special intervention under RKVY.

2.38 The details of State-wise allocation and releases of Additional Fodder Development Programme for the year 2014-15 and 2015-16 are given below :

(Rs. in Crores)

| Name of the State/UTs | 2014-15 | | 2015-16 | | |
|---|---|---|---|---|---|
| | Allocation | Release | Allocation * (Central Share -60%) | Release | Area (Ha.) |
| Andhra Pradesh | 10.00 | 10.00 | 2.4084 | 1.21 | 12545 |
| Chhattisgarh | | | 0.96 | 0.48 | 5000 |
| Haryana | 5.12 | 2.56 | | | |
| Karnataka | 7.68 | 3.84 | 12.50** | 6.25 | 79000 |
| Madhya Pradesh | | | 0.97 | 0.49 | 5050 |
| Maharashtra | 12.50 | 12.50 | | | |
| Odisha | | | 14.40 | 14.40 | 75000 |
| Rajasthan | | | 4.840 | 2.42 | 25210 |
| Telengana | | | 12.00 | 6.00 | 50000 |
| Uttar Pradesh | 4.33 | 2.17 | 1.92 | | 10000 |
| Total | 39.63 | 31.07 | 50.00 | 31.25 | 261805 |

*GOI share of 60% has been approved by Ministry of Finance

**50% GOI share

2.39 The State-wise tentative allocation of AFDP during 2016-17 is given below :

| S. No. | Name of the State | Tentative Allocation (Rs. in crore) |
|---|---|---|
| 1. | Andhra Pradesh | 4.00 |
| 2. | Arunachal Pradesh | 0.21 |
| 3. | Assam | 3.50 |
| 4. | Bihar | 3.10 |
| 5. | Chattisgarh | 4.32 |
| 6. | Goa | 0.12 |
| 7. | Gujrat | 8.00 |
| 8. | Haryana | 0.60 |
| 9. | Himachal Pradesh | 0.60 |
| 10. | Jammu & Kashmir | 0.60 |
| 11. | Jharkhand | 1.30 |
| 12. | Karnataka | 9.00 |
| 13. | Kerala | 2.00 |
| 14. | Madhya Pradesh | 9.70 |
| 15. | Maharashtra | 18.00 |
| 16. | Manipur | 0.40 |
| 17. | Meghalaya | 0.29 |
| 18. | Mizoram | 0.11 |
| 19. | Nagaland | 0.39 |
| 20. | Odisha | 4.20 |
| 21. | Punjab | 0.64 |
| 22. | Rajasthan | 14.10 |
| 23. | Sikkim | 0.16 |
| 24. | Tamil Nadu | 2.70 |
| 25. | Telengana | 4.00 |
| 26. | Tripura | 0.26 |
| 27. | Uttar Pradesh | 4.40 |
| 28. | Uttarakhand | 0.50 |
| 29. | West Bengal | 2.50 |
| | **Total** | **100.00** |

2.40 The State wise proposals received and Central Share recommended under Additional Fodder Development Programme for the year 2016-17, is given below :

(Rs in Crores)

| (Name of the State/UTs | Project submitted | Recommended | Central share recommended |
|---|---|---|---|
| Andhra Pradesh | 6.67 | | |
| Chhattisgarh | 1.60 | 1.60 | 0.89 |
| Karnataka | 16.8 | 16.8 | 10.08 |
| Madhya Pradesh | 16.0 | 16.0 | 9.60 |
| Maharashtra | 30 | | |
| Rajasthan | 23.488 | 23.488 | 14.09 |
| Telengana | 10.0 | 10.0 | 6.0 |
| Uttar Pradesh | 6.60 | 3.20 | 1.92 |
| Total | 119.158 | 79.088 | 47.38 |

## CHAPTER - III

## FEED AND FODDER DEVELOPMENT

**(i) Increasing availability of fodder to mitigate the effect of natural calamities:**

**3**.1 Department of Animal Husbandry, Dairying and Fisheries have issued Advisory on measures to be taken for increasing availability of fodder to mitigate the effect of natural calamities on 18.04.2016. The advisory is also available on the website of the Department. The details of the said advisory have been stated in the succeeding paragraphs.

3.2 Availability of adequate quantity of feed and fodder for livestock is essential for improving livestock productivity. Government of India has released funds in the last financial year under the Centrally Sponsored Scheme for various components of fodder development both for production and post harvest management, and also distributed 'Mini-kits' of high yielding fodder varieties to assist the States in their endeavor to augment the availability of quality feed and fodder. The State Governments have been requested to firm up their fodder requirement to avail the benefit of the recently launched National Livestock Mission (NLM), which has a “Sub-Mission on Fodder Development”.

3.3 The Sub-Mission on Fodder Development comprehensively addresses the feed and fodder issues. The Department had issued the guidelines of the NLM, which is also available on the Department’s web-site for ready reference. Department of Animal Husbandry is having 8 Regional Fodder Stations, located in different agro-climatic zones of the country, which are producing foundation seeds. These foundation seeds would be made available to the State Governments to multiply and produce certified seeds to be made available to animal rearers and dairy farmers for fodder production for which funds are available under NLM. Coarse cereals have been included under National Food Security Mission (NFSM) from 2014-15, which provides additional funds to all States

except Goa, for production of coarse grain. The States also have sufficient funds and autonomy to undertake development of feed and fodder besides other agricultural and allied activities under the Rashtriya Krishi Vikas Yojna (RKVY). Further, as per the latest guidelines, MNREGA Scheme funds can also be utilized for improving availability of fodder.

3.4 Though the availability of feed and fodder has improved in the last decade, still there exists a substantial gap between the demand and availability of fodder in the country, particularly during the lean periods and at the time of natural calamities including droughts / floods. Following measures may be taken for ensuring maximum availability of fodder for sustaining livestock production :

***(a) Optimum utilization of land resources***

3.5 The number of livestock is growing rapidly, but the grazing lands are gradually diminishing due to pressure on land for agricultural and non-agricultural uses. Most of the grazing lands have either been degraded or encroached upon restricting its availability for grazing. The area under fodder cultivation is limited to about 4% of the cropping area, and it has remained static for the last four decades. Owing to the importance of food crops and other cash crops, it is very unlikely that the area under fodder cultivation would increase substantially.

3.6 Therefore, the need of the time is to adopt the practice of land use with multiple crops in a sustainable manner. Adopting Silvi-pastoral and Horti-pastoral models suitable to the area can help in substantially enhancing the availability of forage for the livestock. About 29 million ha area in the country falls under the category of open forests with less than 0.4 canopy density which can be developed with fodder trees. This huge land resource can be utilized for growing fodder, mostly as an under-storey on the partially shaded ground without affecting standing trees. Similar development is also possible in the area under horticulture orchards. While the forest department can undertake Silvi-

pastoral plantations through the Joint Forest Management Committees, the Horti-pastoral activities can be initiated by incentivizing the farmers who are owners of the orchards. The land area under fodder crops, permanent pastures and other grazing lands during 2006-07 to 2013-14 is given at Annexure V.

***(b) Improving production by using high yielding fodder varieties***

3.7 Use of quality fodder seeds including dual purpose grains like bajra, maize and jowar, etc., is essential for improving productivity. Some of the cultivated fodder species for different regions are indicated below *(list is illustrative)*:

| Type of land | Rainfed | Irrigated |
|---|---|---|
| (a) Arid Tracts | Jowar, Bajra, Moth, Guar, Lobia | Lucerne, Berseem, Oats, Maize, Jowar, Bajra, Barley |
| (b) Semi-dry Tracts | Jowar, Bajra, Moth, Guar, Lobia, Velvet Bean, Field Bean, Guinea grass, *Setaria sphacelata,* Rhodes grass | Jowar, Maize, Lobia, Teosinte, Lucerne, Berseem, Sarson, Turnips, Hybrid Napier, Oats, Sudan grass, Guinea grass |
| (c) Semi-wet Tracts | Dinanath Grass, Jowar, Lobia, Rice Bean, Velvet Bean, Teosinte, Sun hemp | Berseem, Oats, Sudan grass, Hybrid Napier, Guar, Jowar, Maize, Para grass, Rhodes, Setaria |
| (d) Wet regions | Jowar, Dinanath, Rice Bean, Coix | Berseem, Oats, Hybrid Napier, Guinea, Lucerne, Sarson, Turnips, Oats, Setaria, Para grass, Jowar |
| (e) Lower Hills | Jowar, Lobia, Bajra, Velvet Bean, Field Bean, Guar | Maize, Jowar, Oats, Berseem, Lucerne, Hybrid Napier, Sudan grass, Setaria, Rhodes |

3.8 An illustrative list of trees, shrubs and grasses for development of pastures, suitable for different regions are enclosed in the Annexure VI.

3.9 Inadequate availability of quality fodder seeds is a major constraint. Fodder seed production is not remunerative in many of the fodder crops. State Governments may take initiatives to encourage farmers for taking up the production of high yielding varieties by

providing sufficient incentives to farmers for production of fodder seeds of high yielding varieties by way of assured procurement with a remunerative price and assistance of inputs. State Governments can avail the benefit of the component of 'Fodder Seed Procurement and Distribution' under the National Livestock Mission (NLM). Provisions under NFSM can also be utilized for this purpose.

3.10 Following high yielding fodder varieties may be considered for seed production programme for improving fodder yield per hectare in respect of existing area under fodder:

| S. No. | Name of the fodder crop | Name of varieties |
|---|---|---|
| 1 | Maize | African tall, J-1006, Vijay composite. |
| 2 | Sorghum | SSG 59-3, PC-23, PC-9, PC-6, HC-136, MP Chari, CO-FS-29, |
| 3 | Hybrid Napier | IGFRI-6, IGFRI-10, CO-4, C-23, Yashwant, NB-21,PNB-84, NB-21 |
| 4 | Bajra | Giant bajra, L-74, GFB-1, Raj. Bajra chari-2, HC 20, AVKB-19 |
| 5 | Cowpea | BL-1, BL-2, UPC-622, UPC-5286, UPC-4200, EC-4216,NP-3, |
| 6 | Guar | BG-1, BG-2, BG-3, Bundel-2, HG 365, HG563, RG-1003 |
| 7 | Berseem | Wardan, Bundel berseem-2, BL-1, BL-10 |
| 8 | Oats | JHO-851, JHO-822, UPO-212, Kent, OS-6, |
| 9 | Chinese cabbage | - |

### 3.11 Forage crops and their varieties suitable for waterlogged soil

| Soil condition | Suitable crop |
|---|---|
| Standing water | Almon grass (*Echinochloa polyptachya*), Para grass, Coix sps., *Iseilema laxum*, *Chloris gayana*, signal grass, karnal grass, congosignal grass |
| Shallow water table | Teosinte (*Zea mexicana*), shevary (*Sesbania sesban*) |
| Temporary water logged soil drained in rabi season | Sasuna (*Medicago denticulata*), teera (*Lathyrus sativus*), chatarimatri (*Vicia sativa*), oats and Berseem |
| Riverine flood water logging | Sorghum (PC-6), Teosinte (TL-6) |
| Saline water logged | Casuarinas and Populus |

3.12 Emphasis be also laid on availability of seeds of short duration and dual purpose crops, which can be used in emergency of drought / floods, for getting fodder in short period. States may ensure availability of such dual purpose quality seeds in consultation with respective Agricultural Universities.

***(c) Adopting suitable crop combinations***

3.13 Productivity potential of most lands can be best utilized through not only crop rotation, but also adopting suitable crop combinations. An indicative list of possible production under different combinations of fodder crops is at Annexure VII, which shows higher productivity for different crops.

3.14 There is a need to disseminate the benefits of using high yielding quality fodder seeds and combination of crops among the farmers through front line demonstrations (FLD) and mini-kits. For this purpose, funds available under RKVY, NFSM for coarse grain and National Livestock Mission (NLM) can be utilized.

3.15 Cultivation of Azolla may be taken up on a large scale as it is highly nutritious, rich in protein and ready within a week's period and available every day thereafter. For establishment of Azolla Production Units, States can avail the benefit for the same, besides utilizing funds under National Livestock Mission (NLM) and RKVY for the purpose.

***(d) Improvement of grasslands / wastelands and other community lands***

3.16 This Department is implementing the component of grassland development in non-forest waste land, range land, grass land, non-arable land and forest land under NLM with 75% Central grant. States can avail benefit under the scheme. Besides, other marginal lands like roadside land, canal side land, land along the railway tracks, etc., may also be utilized for forage cultivation. The forest department can also undertake Silvi-pastoral plantations in degraded forest areas through the Joint Forest Management Committees for use of the communities.

3.17 Wasteland like waterlogged areas, saline soils, sodic soils, etc., can also be utilized for cultivation of fodder varieties suitable for such areas.

***(e) Conservation and Utilization of Crop Residue/ By-products -***

3. 18 Diversion of crop residues for industrial use, etc., may be restricted / banned.

3.19 The Government of Haryana has imposed a ban on burning of agricultural refuge in the fields. Other States may also adopt similar controls to prevent wastage or diversion of dry fodder.

3.20 The State Governments should make it a priority programme to install chaff cutters and construction of manger in each and every household keeping cattle, in order to economize the use of available fodder. This measure can result in saving of up to about ~30% fodder.

3.21 Though, in general, there is scarcity of green fodder in the country, but still in most places surplus green fodder is available during the monsoon. A major part of this surplus green fodder goes waste or is improperly stored, reducing its nutritional value. The farmers may be trained in the techniques like making silage, and be provided assistance under the Central or State schemes to facilitate silage making at household level.

3.22 The availability of dry fodder can be enhanced by installation of low capacity Fodder-block making units at each Primary Milk Cooperative / Panchayat level. Tractor mounted fodder block making units are now available, which can be operated in the fields to store surplus fodder / dry fodder. Agricultural refuge can be condensed with or without mixing it with easily available material like urea, molasses, butter milk, etc., for easy storage and use during the lean period.

3.23 State Governments may promote use of crop residues and agricultural wastes / bye-products as animal feed by enriching it through available technologies like treatment of straw with urea and molasses along with silage. Green topping of sugarcane and other crops should be saved for use as fodder.

***(f) Development of Fodder Banks***

3.24 The Milk Cooperatives and Panchayat are assisted for keeping surplus fodder for use during crisis periods. Gaushalas are encouraged and trained to popularize high-yielding fodder and forage crops and supported for creating fodder banks through silage or fodder blocks and enrichment of crop residues, etc. States with surplus dry fodder will indicate the quantity and type of fodder available with them, so that necessary arrangements for supply to scarcity area can be made.

***(g) Strengthening of extension activities and use of technology***

3.25 It has been seen that very less emphasis is given on extension activities for feed and fodder development. States may strengthen extension activities by associating KVKs, which must play a lead role in educating the farmers in maximizing fodder output with limited land and ensuring quality of feed. Progressive livestock farmers may be identified for training through KVKs / SAUs for growing improved varieties of fodder. The progressive farmers can in turn train other farmers.

3.26 Use of leguminous crops with forage varieties may be popularized through frontline demonstrations through the KVKs. The Regional Fodder Stations of the Government of India have the latest varieties and recommended crop mixtures for the region.

***(h) Convergence of Fodder schemes with MGNREGA Scheme***

3.27 State Governments have been requested earlier to dovetail the fodder and feed development programmes with the MNREGA. The guidelines of MNREGA scheme provide for location-specific grassland development for ensuring adequate fodder supply. The guidelines for the new / additional works permitted under MNREGA scheme also prescribe various livestock related works, including construction of fodder trough (manger) and Azolla units. It is suggested that all the beneficiaries who receive or have received the chaff cutters under any of the Govt. schemes must be provided assistance under MNREGA for construction of fodder trough and Azolla.

3.28 There is a need of low cost transportation of fodder from fodder Surplus States/ Regions to fodder Deficit States/ Regions. In case of natural calamity i.e. Drought or Flood Department immediately identifies fodder surplus States and deficit States. Fodder deficit States will enter into an agreement with fodder surplus States for buying the fodder. In the surplus States nearest Rail Heads are identified were fodder can be stacked for transportation. Similarly Rail Heads of deficit States till where the fodder can be transported are identified. Railway Authorities are roped in to transport the fodder for mitigating the effects of the calamity. This system can even be continued for normal times if the States so desired. This will reduce scarcity in some areas and earn revenue for others.

3.29 During the course of oral evidence on 23.08.2016, the Secretary of the Department stated as under :

> "...We are formulating a National Steering Group which will, for the first time, collaborate with scientists. ICAR is with us. This effort was made for the first time. Director NIANP has been designated as Chairman of the Technical Committee. You have pointed out wastage of potatoes and tomatoes, how to increase the area under cost crop. When there is no profitable farming till then nothing will happen even if we give lakhs of sermon, nothing will happen. The farmers are aware whether they have to cultivate wheat or ragi…."

3.30 When asked about the plan of the Department to tackle the issue arising due to use of dwarf varieties of crops which has drastically reduced the amount of fodder derived from it, the Department in its written reply stated as under :

> "The different high yielding fodder varieties and forage grasses, legumes, shrubs and trees for grassland / grazing land improvement on agro-ecological basis, cover the requirement of fodder and even are more nutritious."

3.31 On being asked whether the Department has undertaken measures other than establishment of Azolla Production Units, to enable States/UTs to take up cultivation of Azolla, the Department in its written reply stated as under :

> "Azolla production units produce Azolla (Azolla grows in water) which is used as Animal feed."

3.32 On being asked whether the Department has explored the usage of Spirulina as a versatile alternative to fodder, the Department in its written reply stated as under :

> "Spirulina (Althrospira sp.) is an edible microalgae and a highly nutritious potential feed resource for many animal species. Experiments conducted so far using dietary Spirulina in different animals have shown improvements in productivity, health, and product quality. It contains all essential amino acids, vitamins and minerals. It is also a rich source of carotenoids and fatty acids, especially y-linolenic acid(GLA). However, it is a new area and further research with Spirulina in livestock diets is required to evaluate its utility as animal feed."

3.33 When asked about the planning of the Department in the direction of discovering and developing plant varieties as alternatives to fodder, the Department in its written reply stated as under:

"The different high yielding fodder varieties of crops and list of forage grasses, legumes, shrubs and trees for grasslands / grazing land improvement on agro-ecological basis are given at Annexure VIII and Annexure VI respectively."

3.34 On being asked about the States that have started using Hybrid Napier, which has emerged as a popular animal fodder in many States and whether the same has been tested for its nutritive value and its effect, the Department in its written reply stated as under:

> "The funds provided by the Department under the component “Fodder Seed Procurement, Production and Distribution” are utilized by the States/ UTs for growing major high yielding fodder varieties including Hybrid Napier. Regional

Fodder Stations are also popularizing Hybrid Napier through regular demonstrations."

3.35 Regarding the extent of usage of short duration dual purpose quality seeds, steps being taken to encourage States/UTs and farming communities to adopt suitable crop combinations along with using high yielding quality fodder seeds, steps taken to address unwanted changes in the farming pattern, promoting cultivation of coarse grains like Jowar, Bajra, Ragi etc. and finding alternatives to coarse grains as dry fodder, the Department in its written reply stated as under:

"The cropped area under fodder is given in the **Annexure IX.** The fodder crops grown are of high yielding fodder varieties. Major high yielding fodder varieties of seeds developed by ICAR are being used by the States/ UTs regularly. It is ensured that the funds provided by the Department under the component “Fodder Seed Procurement, Production and Distribution” are utilized by the States/ UTs for growing major high yielding fodder varieties. The list of such verities is given at **Annexure VIII**."

3.36 When asked about its contemplation on the issue of burning of crop residues widely practiced among farmers in villages and steps taken to curb such practices and educate farmers in this regard, the Department in its written reply stated as under :

"Advisories are issued by the Department from time to time. The latest advisory was issued on 18.04.2016 and is enclosed at Annexure F. Besides the following steps have been taken:

(1) Discouraging of Burning of straws; (2) Crop residue Management through Bailing, fodder block making, Chaffing, Urea Treatment & Total Mixed Ration (TMR) and ; (3) Hay and silage making as well."

3.37 On being asked about the details of provisions and schemes being adopted by the States/UTs to train farmers in techniques of silage making at the household level, measures being undertaken by the Department to promote maximum conservation of crop residue and its development as animal feed and fodder, to encourage farming of perennial

fodder grass, to prevent burning of crop residues and instead diverting these to drought prone areas to be used as fodder, the Department in its written reply furnished as under :

"Under the component “Establishment of silage making Units” of Sub Mission on Feed and Fodder Development funds are provided to farmers through State / UTs as follows:

- For a unit of 50 MT capacity 75% of the cost, or Rs 75,000/- whichever is minimum towards civil work & in additional grant will be provided towards cost of the three HP motor chaff cutter as per the norms given under the component of Distribution of Power Driven Chaff Cutter.
- For a unit of 25 MT capacity 75% of the cost, or Rs 55,000/- whichever is minimum towards civil work & in additional grant will be provided towards cost of the two HP motor chaff cutter as per the norms given under the component of Distribution of Power Driven Chaff Cutter.
- For a unit of 10 MT capacity 75% of the cost, or Rs 40,000/- whichever is minimum towards civil work & in additional grant will be provided towards cost of the one HP motor chaff cutter as per the norms given under the component of Distribution of Power Driven Chaff Cutter.

The above pattern is subject to general sharing of funds between Centre and States/ UTs."

3.38 During the course of briefing on 02.06.2016, when asked about using Railway and Defence Lands for cultivation of grasses, the Secretary and Joint Secretary of the Department responded as under :

“This Department has been trying since 2014-15. The Hon’ble Prime Minister in 2014 also talked of fodder purchase and directed using Defence and Railway land. At a high level meeting it was decided that fodder cropping or development works could not be done on these lands… Defence and Rail lands have been prohibited for such uses from a very high level.”

3.39 On being asked about the steps taken by the Department to encourage States/UTs to utilize wastelands and vacant lands allocated to railways, defence etc. to grow feed and fodder, the Department in its written reply submitted as under:

> " A letter was written to Chairman, Railway Board regarding allowing for growing of grass to be used as fodder for livestock feeding along the sides of Railway tracks. They have replied that it is not feasible due to safety of train operations. Letters have been written to Ministry of Defence and Ministry of Urban Development regarding suggesting alternative spots/unused lands which could be utilized for cultivating animal fodder."

3.40 When asked about the progress made in setting up fodder banks and the Department's plans to set up fodder depots in villages to balance the demand and supply of fodder, the Department in its written reply stated as under :

> "It is submitted that earlier this Department was implementing the component of establishment of fodder banks, but it was dropped from the Central scheme on the recommendations of Planning Commission in the year 2005. The main reason behind this recommendation was that the States were not coming forward to implement the component. A major constraint in sustaining fodder banks is the limited shelf-life of stored fodder, coupled with uncertain and fluctuating demands. Higher transportation costs also make the price of stored fodder inhibitory, even if densified fodder blocks are transported. Generally, in a normal rainfall year, sufficient fodder is available in the form of green fodder and crop residues at much cheaper rates. This is the reason as to why the component of fodder block making units is not being utilized by entrepreneurs, as they are never sure of the demands, and storing fodder beyond few months may reduce the quality of fodder to the extent of rendering it unfit for consumption by livestock."

3.41 The Department provided no specific reply on being asked about the practices included under extension activities and if the Department had succeeded in encouraging farmers to take up such activities, State-wise details of which were sought by the Committee.

3.42 During the course of briefing on 02.06.2016, on the issue of transporting fodder from surplus to deficient areas, the Secretary of the Department responded as under :

> "Sir, if I do not say the truth, thus it will be wrong. Probably there was a demand from the state in the name of Fodder trains, as you might have read in the newspaper. Where fodder is available like Haryana, Punjab as told by Hon'ble Members that should be utilized. Particularly during this drought, we have made arrangement. We have also discussed with the Railway Chairman that if there is any need then you may arrange wagon train and cargo."

3.43 On being asked by the Committee about the States that have surplus production and stock of fodder and the States that have a shortage and if the Department has collected latest data for availability of feed and fodder at the national level, the Department in its written reply stated as under:

> "No detailed studies have been done. Whenever a report is asked about the deficiency of fodder States/UTs mention self sufficiency. Video Conferencing held during May 2016 indicated that all States/UTs are self sufficient in fodder."

3.44 On being asked about the measures taken to ensure that States and UTs implement the idea of Silvi-pastoral plantations and Horti-pastoral activities for increasing availability of fodder, the Department in its written reply stated as under:

> "Advisories are issued by the Department from time to time. The latest advisory was issued on 18.04.2016 ...."

**(ii) <u>Fodder shortage and its import</u>**

3.45 On being asked about the possibility of importing fodder from neighbouring or African countries to meet the acute shortage of fodder, the Department, in its written reply, negated any such possibility.

**(iii) Utilization of barren lands for multi-perennial fodder crops**

3.46 On being questioned about the incentives to farmers for utilizing empty spaces and barren lands across the country for multi-perennial fodder crops, the Department in its written reply stated as under:

> "Under the component “Fodder production from Non-forest wasteland / rangeland / grassland / non-arable land” of Sub Mission on Feed and Fodder Development, assistance is provided to the farmers through States / UTs for developing these areas for growing fodder."

**(iv) Research, Quality Production and Efficient Utilization of Fodder**

3.47 During the course of oral evidence on 23.08.2016, when enquired by the Committee about the processing of jackfruit as fodder, the Director, NIANP, responded as under :

> ".Sir, the seeds of jackfruit are extracted in Kerala and the remaining part is used as silage."

3.48 On being asked about the steps being taken to reduce vegetable and fruit wastages for its utilization as fodder, the Department in its written reply stated as under:

> "Excess vegetables and fruits wastes like apple, tomato, potato, pineapple, carrots etc are used as feed resources in many places. The processing techniques / models are also available to convert or preserve them as good feed resources. ICAR-NAINP developed ‘Pineapple fruit residue storage based total mixed ration for livestock feeding’ and is promoting the technology."

3.49 During the course of briefing on 02.06.2016, on being asked about the collaboration of the Department with ICAR, the Secretary of the Department responded as under :

> “…..Coordination with ICAR is an important issue. Yesterday only, we talked to ICAR Secretary Dr. Mahapatra that we will hold special sitting on coming 10th June. There are 14 institutes and ICAR labs related to Animal Husbandry. We have summoned the Heads of each of these. We and Secretary ICAR will jointly conduct this meeting and seek the work being done for Animal Husbandry, be it

development of fodder or development of Animal Husbandry and as to how it would be taking research from lab to land. We have thought about this."

3.50 When the Committee asked about the plans of the Department to involve and consult ICAR in helping research reach from lab to land and the achievements of the Department in this direction, the Department, in its written reply, apprised the Committee as under:

"Regular consultation meetings are held by the Department with ICAR Institutes like Indian Grassland Fodder Research Institute (IGFRI), National Institute of Animal Nutrition and Physiology (NIANP), etc. New varieties developed by ICAR are conveyed to States/ UTs by the Department and also directly by ICAR."

3.51 When asked by the Committee about the plan of the Department to promote utilization of abundant grasses such as 'Kaas' grown in water logged areas of India and with the help of ICAR develop these grasses into nutritious and quality fodder for animals, the Department in its written reply stated as under :

" Presently, it is not possible to use 'Kaas' as fodder for animals."

3.52 When the Committee enquired about the plan of the Department to use technology through Central Government schemes such as Digital India to empower farmers engaging in production of fodder crops and to provide them with alternate marketing channels for sale of fodder and if the Department had a warning mechanism for warning livestock owners of impending adversities of weather so as to alert them to store fodder for use during those times, the Department, in its written reply stated as under :

"Government has launched www.mkisan.gov.in and www.farmer.gov.in for disseminating information about all aspect of farming and animal husbandry. Kisan SMS portal has also been launched to provide SMS to the farmers using this portal. Advisories related to fodder are also sent through this portal which are also in the regional languages."

**(v) Demand and availability of Fodder**

3.53 On being asked if the NABCONS had conducted any recent study post 2007 to assess the gap between demand and availability of different types of fodder available in the country, the Department in its written reply furnished as under :

" The estimates regarding feed and fodder in India by NIANP are as below :"

(Dry matter in million tonnes)

| Type of Fodder | Parameters | 2012 | 2015 | 2020 | 2025 |
|---|---|---|---|---|---|
| Dry Fodder | Requirement | 480 | 491 | 530 | 550 |
| | Availability | 375 | 387 | 408 | 433 |
| | Deficit (%) | -22 | -21 | -23 | -23 |
| Green Fodder | Requirement | 820 | 840 | 880 | 1000 |
| | Availability | 614 | 619 | 596 | 600 |
| | Deficit (%) | -25 | -26 | -32 | -40 |
| Concentrate | Requirement | 82 | 87 | 96 | 105 |
| | Availability | 55 | 58 | 61 | 65 |
| | Deficit (%) | -33 | -34 | -36 | -38 |

3.54 On being questioned about the steps taken to overcome the shortage of seeds of high yielding fodder varieties of cultivated crops, the Department in its written reply submitted as under:

> " Major high yielding fodder varieties of seeds developed by ICAR are being used by the States/ UTs regularly. It is ensured that the funds provided by the Department under the component “Fodder Seed Procurement, Production and Distribution” are utilized by the States/ UTs for growing major high yielding fodder varieties. Private companies are also growing and importing fodder seeds and selling in the market."

3.55 When asked about measures adopted to address the concern of improvement of grasslands and problems arising out of the lack of this as this not only affects the

availability of fodder but also the productivity of the livestock feeding on these, the Department in its written reply stated as follows:

> "Under the component “Fodder production from Non-forest wasteland / rangeland / grassland / non-arable land” of the Sub Mission of Feed and Fodder Development assistance is provided to the farmers through States/ UTs for developing these areas for growing fodder."

3.56 On being asked whether the Department has conducted any detailed State-wise study about the extent to which the newly developed high yielding fodder varieties / crops have helped in bridging the gap between demand and availability of feed and fodder, the Department in its written reply stated as under :

> "No detailed studies have been conducted. However, answer to the question of para 3.54 shows an improvement in the situation."

3.57 When asked if the Department has engaged experts to work on feed and fodder development schemes being implemented in States and UTs, the Department in is written reply stated as under :

> "No. Budgetary allocations are not given."

3.58 On being questioned about the State-wise details of measures taken by the Department to improve the already diminishing grazing lands available for livestock, the Department in its written reply stated as under :

> "Under the component “Fodder production from Non-forest wasteland / rangeland / grassland / non-arable land” of the Sub Mission of Feed and Fodder Development assistance is provided to the farmers through States/ UTs for developing these areas for growing fodder."

3.59 During the course of oral evidence on 23.08.2016, the Secretary of the Department stated as under :

> "..I would like to do one practical about Gochar land and is i told for that we and our Department is making continuous efforts. Milk cooperatives have a huge role to

play, be it land cultivation of Gochar or the idea of professional forward cultivation on the farmlands owned by a farmer. One such example is that of the Dharmad Gram Sabha near Anand in Gujarat, where the Panchayat is taking up this practice on a land area of 60 hectares. Presently, the Chief of Kerala Milk Union shared that the owner of 5 ha of farmland is given an assistance of Rs.1,00,000/- through the Cooperative Society. The farmer is provided with means and the fodder is bought back from him. Through this, farmers providing milk to the dairy can obtain fodder at a good price. We are looking forward to such experiments in order to make fodder a profitable enterprise. We have thought like that. We are collaborating with MGNREGA, Panchayat Raj and NRLM for the same."

3.60 On being asked about the achievements of the Department as a result of the commissioned study conducted for the demand and availability of various types of fodder, the Department in its written reply stated as under:

"No such study has been conducted so far."

**(vi) <u>Cattle breeds, their health and nutrition security</u>**

3.61 When questioned about the measures taken by the Department to bring about fodder development to feed the upcoming improved breeds of livestock, to ensure nutrition security in the livestock population, for developing feed and fodder which is palatable to animals as well as an adequate source of nutrition for them and if the Department has ventured in the direction of innovating ways of collaborating with veterinary graduates, agri-business dealers, agri-clinics etc in order to support hybrids and foreign breeds of animals being introduced to the local climate, the Department in its written reply submitted as follows :

"Department of Animal Husbandry, Dairying and Fisheries (DADF), Government of India has taken necessary steps to increase fodder production in various parts of the country by providing financial assistance to the States / UTs under Centrally Sponsored National Livestock Mission with a Sub Mission on Feed and Fodder Development. The detailed components of the Sub-Mission are as below :

| S. No. | Name of the Components |
|---|---|
| 1. | Fodder Production from Non-forest wasteland/rangeland/grassland/non-arable land |
| 2. | Fodder production from Forest land |
| 3. | Fodder Seed Procurement/ Production & Distribution |
| 4. | Introduction of Hand Driven Chaff-Cutter |
| 5. | Introduction of Power Driven Chaff-Cutter |
| 6. | Distribution of low capacity, tractor mountable Fodder Block Making units, hay baling machines/reapers/forage harvesters |
| 7. | Establishment of silage making Units |
| 8. | Establishment of by-pass protein production units |
| 9. | Establishment of Area Specific Mineral Mixture / Feed Pelleting/ Feed Manufacturing Unit. |
| 10. | Establishment/modernization of Feed Testing Laboratories |

3.62 During the course of briefing on 02.06.2016, on being asked about the disaster management plans for livestock, the representative of the Department responded as under:

> "...The Department has a disaster management plan with the NDMA and it is notified as well as available on our website...."

3.63 On being asked about the disaster management plans for livestock in order to shield them from disasters, the Department in its written reply responded as under:

> "Department has already formulated disaster management plan for livestock population to shield them from disasters."

3.64 When asked about the measures taken by the Department to encourage traditional Indian practice of free range feeding of animals which has been proven to increase nutritive value of animal produce, the Department in its written reply stated as under :

> "Under the component “Fodder production from Non-forest wasteland / rangeland / grassland / non-arable land” of the Sub Mission of Feed and Fodder Development,

assistance is provided to the farmers through States/ UTs for developing these areas for growing fodder.

Development of grasslands will encourage the traditional Indian practice of free range feeding of animals."

3.65 In the light of stagnation of the cropping area of fodder in the country, the Committee enquired if the Department has taken any steps to enhance the nutritive value of feed and fodder to augment the productivity of the livestock, to which the Department, in its written reply stated as under :

"Nutritive value may be broadly defined as the ability of a feed to provide the nutrients required by an animal for maintenance, growth and reproduction. It is a function of both voluntary feed intake (FI) and the efficiency of extraction of nutrients from the feed (digestibility, D). The following steps have been taken to augment the productivity of the livestock:

1. Discouraging of Burning of straws.
2. Crop residue Management through Bailing, Chaffing, Urea Treatment & Total Mixed Ration (TMR)
3. Strengthening of Fodder seed Chain
4. Better utilization of Common Property Resources (CPR)
5. Hay and silage as well."

3.66 On being asked if the Department has conducted any study to assess the nutritive value of commonly available feed and fodder in the country, the Department in its written reply stated as under :

"Department has not conducted any study to assess the nutritive value of commonly available feed and fodder in the country. However, ICAR and Agriculture Universities sponsor such studies which are available in their publications."

**(vii) <u>Gender Perspective in Animal Husbandry</u>**

3.67 The National Agriculture policy formulated in the year 2000, accorded high priority to recognition and mainstreaming of women's role in agriculture and highlighted incorporation of 'Gender Issues' in the agriculture development Agenda. Within overall

mandate, goals and objective, DAHDF places special emphasis on women participation and contribution in the Animal Husbandry, Dairying and Fisheries.

## PART – II

## OBSERVATIONS / RECOMMENDATIONS

### NEED FOR INCREASING AVAILABILITY OF FEED AND FODDER:

**1. The Committee note that availability of adequate quality of feed and fodder for livestock is essential for improving livestock productivity. However, the Committee are constrained to note that there is substantial shortage of feed and fodder in the country. As per the estimates of National Institute of Animal Nutrition and Physiology (NIANP), the deficit in the requirement and availability of Dry Fodder, Green Fodder and Concentrates during 2015 was to the extent of 21 MT, 26 MT and 34 MT which will increase further to 23 MT, 40 MT and 38 MT respectively by the year 2025. This shortage is due to increasing pressure on land for growing food grains, oil seeds and pulses and inadequate attention being given to the production of fodder crops. Further, on account of diversified use of agricultural residues, the grazing lands are gradually diminishing. The area under fodder cultivation is also limited. Majority of the grazing lands have either been degraded or encroached upon restricting their availability for livestock grazing. The area under fodder cultivation is only about 4% of the cropping area, and it has remained static for a long period of time. According to the Department, owing to the importance of food crops and other cash crops, it is very unlikely that the area under fodder cultivation would increase substantially. While the availability of feed and fodder has improved in the last decade, the Committee note that still a lot is required to be done to bridge the gap between the demand and availability of fodder in the country, particularly during the lean periods and crisis situations. Needless to say, livestock is a major source of livelihood for a majority of the rural population in the country. The contribution of livestock to the household income of the farmers can not be ignored. It generate sustainable livelihood for small and marginal**

**farmers in the country. Thus, livestock is an important and integral part of Indian agriculture and rural economy. However, livestock husbandry can not be sustained with out addressing the development of feed and fodder resources. It is, therefore, imperative that forage production and its quality may be augmented to improve productivity of livestock. In this context, the Committee note that the Government has launched "Sub Mission on Fodder and Feed Development " under the National Stock Mission from 2014-15 to comprehensively address the feed and fodder issue. The Government has also issued advisory on measures to be taken for increasing availability of fodder to mitigate the effect of natural calamities. However, the Committee feel that the Department being the nodal agency need to make concerted and coordinated efforts ensuring that the shortage of feed and fodder in the country is addressed effectively and comprehensively. The Committee, therefore, would like the Department to take up the issue with all its seriousness and coordinate with all stakeholders on the issue. The Committee would also like to be apprised of the initiatives undertaken by the Government in this regard and the progress made therein.**

**ALLOCATION OF FUNDS**

**2. The Committee note that States have been given liberty to choose the development of any or all the four Sub Missions under the National Livestock Mission (NLM) with a restriction of availability of budget with the Department. The tentative budget outlay to each State/UT is conveyed in the month of April each year so that they can formulate the plans best suited to their State/UT. Afterword, the plan is received in the Department and processed for release of budget to the State/UT. The Committee are of the opinion that the practice of tentative allocation of funds to States should be done away with and instead need based funds as per the requirement of the States be allocated by the Department. However, the**

**Committee are anguished to note that funds being allocated to the Sub Missions under NLM in the States were woefully inadequate during the years 2014-15 and 2015-16. This has resulted in meager allocation to the Sub Missions in 2014-15, with the situation worsening in the year 2015-16 when no separate allocations to the Sub Missions could be made due to very less funds and the budget of 2015-16 was used to meet liabilities of the previous year. Also, funds released under the Sub Mission on Fodder and Feed Development in the years 2014-15 and 2015-16 are 47.63 crores and 16.86 crores, respectively. Needless to say, insufficient funds have severely hampered the implementation of physical and financial targets of the Sub Mission on Fodder and Feed Development. The Department has also accepted the fact that the implementation of the Sub Mission has been hampered by the less allocation of funds as against the approved outlay. According to the Department, owing to very low allocations of funds for NLM, overall impact of the schemes of Sub Mission could not be ascertained from the States/UTs as the States/UTs could not given sufficient funds or no funds at all for implementation. In the absence of such study, the Committee feel that the Department would not get the opportunity to undertake corrective interventions to reorient its schemes/Sub Missions for the benefit of intended beneficiaries. Deprecating this sordid state of affairs, the Committee, therefore, recommend that the Department should take up this issue with the Ministry of Finance and impress upon them to provide adequate funds so that schemes/Sub Missions of the National Livestock Mission, particularly the Sub Mission on Fodder and Feed Development, do not suffer for want of funds.**

**3. During the course of evidence, the Secretary of the Department informed the Committee that a National Perspective Plan is being formulated which would also be circulated to the States asking them to furnish integrated Plan so that funds could be allocated accordingly with in the limited resources of the Central**

**Government. The Committee, therefore, recommend that the formulation of National Perspective Plan as proposed by the Government be expedited in consultation with all States/UTs so that funds could be allocated to them as per their demand for effective implementation of schemes/Sub-Missions undertaken by them. The Committee would like to be apprised of the actions taken and progress made by the Department in this regard.**

**OPTIMUM UTILISATION OF LAND RESOURCES FOR FODDER DEVELOPMENT**

**4. The Committee note that the number of livestock is growing rapidly but the grazing lands are gradually diminishing due to pressure on land for agricultural and non-agricultural uses. According to the Department, the need of the time is to adopt the practice of land use with multiple crops in a sustainable manner. Adopting Silvi-pastoral and Horti-pastoral models suitable to the area can help in substantially enhancing the availability of forage for the livestock. About 29 million ha area in the country falls under the category of open forests with less than 0.4 canopy density which can be developed with fodder trees. This huge land resource can be utilized for growing fodder, mostly as an under-storey on the partially shaded ground without affecting standing trees. Similar development is also possible in the area under horticulture orchards. While the forest department can undertake Silvi-pastoral plantations through the Joint Forest Management Committees, the Horti-pastoral activities can be initiated by incentivizing the farmers who are owners of the orchards. While the Department has issued advisory to the States in this regard, the Committee would like the Department to pursue its advisory and coordinate with all stake holders including State Governments to utilize huge land resources which fall under the category of open forests and area under horticulture orchards for growing fodder. Barren land or non-forest wasteland or non-arable land across the country should also be utilized for multi-perennial**

**fodder crops for which adequate incentives should be given to the farmers. In this context, the Committee strongly feel that the unutilised land of Railways and Defence should also be utilised for cultivation of fodder crops. It was pointed out by the Committee that during British regime, unutilized land along both sides of the railway lines were being used either for grazing or for production of fodder. According to the Department, the matter was taken up at the highest level and after lot of deliberations over the issue, it was decided that the unutilised land of Railways and Defence could not be utilised for development of fodder. Nevertheless, the Committee still feel that the issue needs to be re-looked in to by all the stakeholders as a large chunk of Railways and Defence land is being encroached upon by unscrupulous elements. The Committee would like to apprised of the action taken by the Department in this regard.**

**UTILISATION OF ALLOTED FUNDS BY THE STATES**

**5. According to the Department, monthly review meetings with Principal Secretary, Animal Husbandry of the States/UTs are held by the Secretary (ADF) in which apart from other issues, utilization of funds and proper implementation of schemes remain the main agenda point. Besides matters are followed by writing DO letters, through video conferences and making phone calls. During the course of evidence also, the Secretary of the Department informed the Committee that the Department holds review meetings with the States/UTs regularly, in order to ensure proper and optimum utilization of allocated funds. It was also informed to the Committee during the course of evidence that utilization certificates worth Rs.490 crores remain outstanding and an unspent balance of Rs.810 cores remain with the States and therefore, a special meeting on this issue has been called by the Department. While expressing its anguish over the issue of outstanding Utilisation Certificates (UCs) and unspent balance with the States, the Committee**

**pointed out that this issue was raised by them several times in the past. However, the Committee regret to note that the Department does not appear to bother to find out the constraints which hampers utilization of funds by the States. The Committee also feel that there is no effective mechanism in place to coordinate with the States at district or block level and to monitor the pace of utilization of funds by the States at the ground level. In this context, the Committee also feel that one of the reasons for non-utilisation of funds may be formulation of Plan or Mission or Sub Mission by the Central Government with out consulting the State Governments as a result of which the States are reluctant to cooperate with the Centre for timely utilisation of funds for the purpose . The Committee, therefore, recommend that the Department may find out the constraints which hamper timely utilization of funds and submission of UCs therefor by the States. The Committee also recommend that a mechanism may be put in place in coordination with State Governments to monitor the pace of utilization of funds at the ground level. The Committee would like to be apprised of the action taken by the Department in this regard.**

**FUNDING OF THE COMPONENTS OF SUB MISSION ON FEED AND FODDER DEVELOPMENT**

**6. The Committee note that the Department has taken necessary steps to increase fodder production in various poart of the country by providing financial assistance to the States/UTs under Centrally sponsored National Livestock Mission with a Sub Mission on Feed and Fodder Development. The Committee also note that from 28th Oct 2015, the funding of the components has been changed to the sharing ratio of 60:40 between the Centre and the States for those schemes for which the Central share is higher. However, for those scheme for which the Central share is 60% or lower the same will continue as per the existing Guidelines. Further,**

**for the eight North-Eastern and three Himalayan States this ratio of sharing between Central and State will be 90:10. It is clarified that in these eight North Eastern States and three Himalayan States for those schemes for which the Central Share was 90% or lower the same will continue as per the existing Guidelines. Similarly for Union territories, the Centrally Sponsored Schemes will be funded 100 percent by the Central Government except for those schemes for which the Central share was lower than 100%, the same will continue as per the existing Guidelines. During the evidence, the Secretary of the Department informed the Committee that subsidy is granted on manual as well as on power driven chaff cutters. While 75 % subsidy is being granted on manual driven chaff cutter, the same is 50 % on power driven chaff cutter. There is no doubt that power driven chaff cutter has given the farmers the convenience to chop fodder for livestock with ease and has also saved their time and the labour involved in the process, particularly those women fold who are involved therein. The time saved by using power driven chaff cutter could be utilised by them for their other activities. However, the Committee still feel that there are certain things in the processing of chopping of fodder which could not be done without the help of manpower. The Committee, therefore, recommend that power driven chaff cutter may also be given subsidy to the extent of 75% as being given on manual driven chaff cutter as also assured by the Secretary of the Department on the issue.**

**<u>UTILISATION OF CROP RESIDUES</u>**

**7. The Committee note that the crop residues are being wasted either by diverting it for industrial use or by burning agricultural refuge in the fields itself causing environmental pollution. One of the reasons for such wastage is attributed to the fact that the farmers have very little time available between two crops.**

**Further, non-availability of labour or high cost of labour, lack of space, hazards of fire and damage caused by rains are other factors which influence farmers to dispose off their crop residues/agricultural wastes as early as possible and they have no interest to process and store the crop residues till completion of sowing of their next crop. The Committee feel that to avoid such practices, it would be necessary that crop residues and agricultural wastes are promoted as animal feed by improving its nutritional value and its palatability through available techniques like treatment of straw with urea and molasses along with silage. Issue of advisory by the Department to the States on the issue is not enough unless opportunities related to production and efficient use of crop residues/by-products is addressed by the Department in coordination with the State Governments for improving the forage resources in the country. The Department being the nodal agency can not ignore its responsibility on the issue. The Committee, therefore, recommend that wastage of crop residues/agricultural wastes by way of burning and diverting its uses for industrial purposed may be checked on priority basis and the same may be converted and stored as forage for its supply to the regions/areas having scarcity of fodder. The Committee would like to be apprised of the initiatives undertaken by the Department in this regard.**

**FRUITS AND VEGETABLES WASTES AS LIVESTOCK FEED**

**8. A significant percentage of fruits and vegetables like apple, tomato, potato, pineapple, carrots etc go as waste due to non-availability of market. Further, processing of fruits and vegetables and its packing, distribution and consumption also generate a huge quantity of fruit and vegetable wastes. The huge quantity of fruit and vegetable wastes can be effectively utilized as livestock feed, without effecting the palatability, nutrient utilization, health or performance of livestock. The**

**effective and efficient utilization of fruit and vegetable wastes will reduce the cost of animal feeding thereby increasing farmers' profits and help in waste management and reduction of environmental pollution. For this purpose, suitable methods need to be adopted to conserve such resources so that these can be fed to the livestock throughout the year or specifically during the lean period of green fodder production. It was informed to the Committee that excess vegetable and fruits wastes like apple, tomato, potato, pineapple, carrots etc are used as feed resources in many places. The processing techniques/models are also available to convert or preserve them as good feed resources. In view of the foregoing, the Committee, therefore, recommend that conversion of fruit and vegetable wastes as an alternate of fodder resources may be vigorously promoted by the Department in coordination with all stakeholders including State Governments. The Committee also recommend that awareness may also be created amongst the farmers and those involved in the processing of fruits and vegetables. Further, technologies involved for producing quality forage from fruit and vegetable wastes may also be demystified to them .**

**DEVELOPMENT OF HIGH YIELDING FORAGE-RICH FOOD CROPS**

**9. The Committee note that major high yielding fodder varieties of seeds developed by ICAR are being used by the States/ UTs regularly. It is also ensured that the funds provided by the Department under the component "Fodder Seed Procurement, Production and Distribution" are utilized by the States/ UTs for growing major high yielding fodder varieties. Private companies are also growing and importing fodder seeds and selling in the market. In this context, the Committee pointed out that earlier our crops used to be long, one part of which gave food grain and the remaining three parts was used as fodder for the livestock.**

**But during the era of Green Revolution, deliberate attempts were made by plant breeders and agro-scientists to release dwarf varieties of crops which although gave high yields and made us self-dependent in production of grain, the same seriously affected fodder production in the country. The Committee regret to note that the agro-scientists ignored this aspect conveniently without addressing the problem. While it was essential to develop seeds for dwarf varieties of crops for making the country self-dependent in the matter of food, at the same time, it was also essential for the agro-scientists to think comprehensively and in an integrated manner for development of varieties of crops which would have given high quality of fodder and yield for livestock without any reduction in production of food grain. The Committee, therefore, recommend that agro-scientists may be encouraged to develop varieties of food crops having high forage value with out affecting yield of food grain and their efforts in this regard may also be supplemented with adequate funding. Further, vigorous efforts may also be made for creating awareness amongst the farmers for selection of new varieties of forage-rich food crops replacing the old varieties.**

**WASTELANDS FOR FORAGE CULTIVATION**

**10. The Committee note that wasteland like waterlogged areas, saline soils, sodic soils etc can also be utilized for cultivation of fodder varieties suitable for such areas. The Committee also note that the Department is implementing the component of grassland development in non-forest waste land, range land, grass land, non-arable land and forest land under NLM with 75% Central grant. States can avail benefit under the scheme. Besides, other marginal lands like roadside land, canal side land, land along the railway tracks, etc., may also be utilized for forage cultivation. The forest department can also undertake Silvi-pastoral plantations in**

**degraded forest areas through the Joint Forest Management Committees for use of the communities. Considering the limitations of traditionally cultivated fodder crops, the Committee are of the view that it is imperative to introduce non-traditional fodder crops which can be grown on wastelands. Fast growing shrubs and trees need to be grown which can be lopped regularly as fodder. Fodder shrubs, trees and grasses which are suitable for wastelands and tolerant to drought and harsh soil conditions and resistant to pests and diseases need to be developed. The Committee feel that development of these lands for forage production may not only ensure enhanced supply of forage but also help in conserving the natural resources and recharging ground water, while improving the bio-diversity. The Committee, therefore, recommend that a holistic plan may be formulated for development of wasteland for its utilization for cultivation of fodder varieties in coordination with all stakeholders including States. The Committee would like to be apprised of the initiatives undertaken by the Department in this regard.**

**ENHANCING NUTRITIVE VALUE OF FODDER**

**11. The Committee note that as the land area under fodder cultivation remaining static for the last few decades, there is an urgent need to work on enhancing the nutritive value of fodder as it has a significant bearing on the productivity of the livestock. Straws and cellulosic waste such as residues of cereals like paddy, sorghum, pearl millet, maize etc. which have poor nutritive value, can be enriched by treating with urea. The Department may seek the expertise of the National Institute of Animal Nutrition and Physiology (NIANP), Bengaluru in this regard. Production of straw-based feed pellets and focused nutrition for milch animals and their off-springs are also some of the steps that need to be adopted. There is also**

**the need to ensure nutrition security in our livestock population as these contribute immensely to the food basket of the country and to identify feed and fodder that may cause harm to animals, when consumed in the long run. The Committee would like to be apprised of the initiatives taken by the Government in this regard.**

**DISSEMINATION OF FORAGE-BASED RESEARCH INFORMATION**

**12. The Committee note that a significant research has been carried out by ICAR Institutes like Indian Grassland Fodder Research Institute (IGFRI), National Institute of Animal Nutrition and Physiology (NIANP) etc. to identify suitable forage crops, breed new varieties for large scale production of fodder. However, it is a matter of concern that even then there is significant gap between the demand and supply of fodder in the country and production of forage has not picked up on a massive scale to meet the demand of the farmers in times of need particularly during natural calamities. This calls for an in-depth study to understand and address the problem. The Committee are of the view that there is a wide communication gap between the forage development programme and the livestock extension department of the States. There is no coordination between ICAR and Animal Husbandry department of the State. As a result, there is no free flow of information from either side. Agro-scientists need to interact with farmers to apprise their needs and develop suitable technologies and systems which an benefit them. It is imperative that there is regular interaction between ICAR/Department and stakeholders including the States. The Committee, therefore, feel that a well established communication network would help the agro scientists to understand the problem of the farmers of particular regions/areas and they in turn can offer suitable interventions. For this purpose, research units could be set up to promote on-farm studies and tests of technologies under field**

**conditions. Research studies also need to be carried out in association with farmers' organizations, State Agriculture and Animal Husbandry Departments, Krish Vigyan Kendras. Further, Kisan Melas and seminars need to be organised on regular basis for dissemination of information and technologies to the intended beneficiaries. The Committee, therefore, recommend that a mechanism may be put in place to establish a vibrant communication between Agro scientists and the farmers to address the problems confronting them. The Committee would like to be apprised of the steps taken by the Department in this direction.**

**FODDER AND PASTURE MANAGEMENT**

**13. Grazing lands and pastures play an important role in the livestock economy of the country and the state. However, the Committee are anguished to witness the collapse of traditional agro-forestry practices and invasion of pastures and grazing lands by invasive species. Such instances have only added to the woes of the livestock owners and burdened the already limited fodder resources. Grazing lands are gradually diminishing due to pressure on land for agricultural and non-agricultural uses. Most of the grazing lands have either been degraded or encroached upon restricting its availability for grazing for livestock. The number of livestock is also growing rapidly in the country. Gradual collapse of traditional agro-forestry practices, sub-par performance of major fodder resources such as grasslands, wastelands, common fallows etc. and invasion of pastures and grazing lands by invasive alien plant species as well encroachment of pastures and their diversification for building purposes has only worsened the fodder situation of the country. The Committee feel that it is the need of the hour to conserve and preserve grasslands in the country. However, the absence of a nodal agency to coordinate and steer grassland and fodder development programmes within the**

**country has led to lack of channelized efforts in this direction. The Committee, therefore, recommend that a holistic plan may be formulated in coordination with States for conservation and preservation of grassland for pasture in the country. The Committee would also like to be apprised of the initiatives taken by the Government in this direction.**

**ADDITIONAL FODDER DEVELOMENT PROGRAMME**

**14. The Committee note that the Additional Fodder Development Programme (AFDP), a sub-scheme of Rashtriya Krishi Vikas Yojana (RKVY), aims at mitigating the adverse impact of drought on fodder production by providing financial and technical assistance to farmers undertaking fodder cultivation. The Committee are, however, displeased with the fact that the Department has not succeeded in encouraging State to purchase high yielding variety fodder seeds from the Regional Fodder Stations (RFS) that have been set up in different agro-climatic zones. The Committee, therefore, recommend that the Department persuade States to purchase high yielding variety fodder seeds from the Regional Fodder Stations and to adhere to the advisory issued to the States and UTs from time to time so that AFDP can perform successfully while using land resources optimally, adopting suitable crop combinations, improving grasslands / wastelands, conserving and utilizing crop residue and strengthening extension activities etc. Furthermore, the role of private sector in equipment, financing and commercial feed and fodder production needs to be assessed and harnessed to aid AFDP and other such programmes aimed at fulfilling the need for fodder and providing equipment to farmers and livestock owners undertaking fodder cropping. The Committee also note that as per the prevailing AFDP Guidelines, farmers in the drought affected districts/blocks are provided assistance at the rate of Rs.3200/- per hectare as per cost norms for a**

**maximum area of 2 ha per beneficiary for taking up additional production of fodder in these districts/blocks. The Committee feel that assistance of Rs.3200/- per hectare does not seem to be adequate and therefore, desire that said assistance needs to be raised suitably. In this context, the Committee would like to know the number of farmers who have been given such financial assistance and the benefits accrued as a result therefor since inception of the programme. The Committee also urge the Department to raise awareness about the convergence of fodder schemes with MGREGA Scheme, so that the Department can fulfill twin objectives of attaining self sufficiency in fodder as well as generating gainful employment opportunities for the rural masses. Furthermore, the Department also needs to formulate a action plan to make fodder cropping a profitable enterprise. The Committee would like to be apprised of the actions initiated by the Government in this direction.**

**GENDER PERSPECTIVE IN ANIMAL HUSBANDRY**

**15. The Committee note that the National Agriculture Policy formulated in 2000 accorded high priority to recognition and mainstreaming of women's role in agriculture and highlighting incorporation of 'Gender Issues' in the agriculture development agenda. The Committee also note that within the overall mandate, goals and objectives, the DAHDF places special emphasis on women participation and contribution in the Animal Husbandry, Dairying and Fisheries Sector. While appreciating the emphasis of the Department, the Committee urge them to take this forward by creating more opportunities for women in the Sector and involving more number of women in the workforce by way of MGNREGA component of construction works under the Sub Mission, by training women into silage making, providing higher subsidies for women using chaff cutters, both power and hand**

**driven, by aiding formation of women self help groups which are able to take up entrepreneurial activities in the field of cattle rearing, fodder storage, milk cooperatives etc. Taking forward the work of Krishi Vigyan Kendra (KVKs) in training women in activities like fodder management, wasteland development etc. and helping them form Self Help Groups (SHGs), the Department may very well emulate the success of cooperatives in the field of feed and fodder development which will not only have a positive impact on the livestock but also foster dairy development in the long run. The Committee, therefore, recommend that the Department may work out plans drawing more and more women folk into the Animal Husbandry, Dairying and Fisheries sector and set an example of opening up gainful and profitable employment opportunities and bringing about gender balance in the workforce in the agriculture sector, particularly in the sector of Animal Husbandry, Dairying and Fisheries. The Committee would like to apprised of the initiatives taken by the Government in this regard.**

**NEW DELHI**
**___December, 2016**
**Agrayahana, 1938 (Saka)**

**HUKM DEO NARAYAN YADAV**
**Chairperson**
**Standing Committee on Agriculture**

**Annexure I**

**State-wise allocations for Centrally Sponsored Schemes of National Livestock Mission for the year 2014-15 & 2016-17**

**(Rs in Lakh)**

| State / UT | 2014-15 | 2016-17 |
|---|---|---|
| Andhra Pradesh | 1370 | 860 |
| Bihar | 1365 | 1238 |
| Chhattisgarh | 886 | 688 |
| Goa | 77 | 10 |
| Gujarat | 1032 | 1225 |
| Haryana | 725 | 493 |
| Himachal Pradesh | 447 | 180 |
| Jammu & Kashmir | 524 | 260 |
| Jharkhand | 838 | 630 |
| Karnataka | 1625 | 873 |
| Kerala | 559 | 105 |
| Madhya Pradesh | 1706 | 1670 |
| Maharashtra | 1838 | 1340 |
| Odisha | 1005 | 780 |
| Punjab | 686 | 460 |
| Rajasthan | 2137 | 1735 |
| Tamil Nadu | 1638 | 704 |
| Telengana | 979 | 617 |
| Uttar Pradesh | 2616 | 3042 |
| Uttarakhand | 450 | 190 |
| West Bengal | 1654 | 1100 |
| Andaman & Nicobar | 18 | 10 |
| Chandigarh | 10 | 10 |
| Dadra &Nagar Haveli | 12 | 10 |
| Daman & Diu | 9 | 10 |
| Delhi | 23 | 25 |
| Lakshadweep | 14 | 10 |
| Puducherry | 17 | 25 |
| Arunachal Pradesh | 276 | 270 |
| Assam | 1782 | 1064 |
| Manipur | 142 | 200 |
| Meghalaya | 241 | 266 |
| Mizoram | 82 | 200 |
| Nagaland | 229 | 225 |
| Sikkim | 53 | 205 |
| Tripura | 236 | 270 |
| NABARD | | |
| NABARD Grants-in-aid General | | 6100 |
| NABARD SCSP | | 500 |

| | | |
|---|---|---|
| NABARD NER States | | 1600 |
| **TOTAL** | **27300** | **29200** |

**Annexure II**

**The physical target of Submission of Feed and Fodder Development of National Livestock Mission is as under :**

| S.N. | Components | CS / CSS | 2013-14 | 2014-15 | 2015-16 | 2016-17 | Total |
|---|---|---|---|---|---|---|---|
| 1 | Forage production from Non-forest wasteland /rangeland/ grassland /non-arable land (ha) | CSS | 200 | 300 | 300 | 300 | 1100 |
| 2 | Forage production from Forest Land (ha) | CSS | 1000 | 1100 | 1200 | 1300 | 4600 |
| 3 | Cultivation of coarse grains and dual purpose crops (ha) | To be serviced under the NFSM (Except pure Fodder crops like African Tall Maize) | | | | | |
| 4 | Fodder seed production and distribution (Tonne) | CSS | 8000 | 8500 | 10000 | 12000 | 38500 |
| 5 | Conservation of fodder through post harvest technologies | CSS | | | | | |
| i. | Distribution of hand driven chaff cutters (Nos) | | 20000 | 20000 | 20000 | 20000 | 80000 |
| ii. | Distribution of power driven chaff cutters (Nos) | | 3000 | 3500 | 4000 | 4500 | 15000 |
| iii. | Establishment of high capacity Fodder Block Making units (Nos) | | 5 | 5 | 5 | 5 | 20 |
| iv. | Distribution of low capacity, tractor mountable Fodder Block Making units (Nos) | | 50 | 100 | 100 | 100 | 350 |
| v. | Establishment of Silage making units (Nos) | | 300 | 400 | 500 | 600 | 1800 |
| vi. | Establishment of Bypass protein making units (Nos) | | 3 | 5 | 7 | 7 | 22 |
| vii. | Establishment of area specific mineral mixture / feed processing units (Nos) | | 3 | 5 | 5 | 5 | 18 |
| viii. | Establishment / modernisation of Feed testing laboratories (Nos) | | 3 | 3 | 3 | 3 | 12 |
| 6 | Regional fodder stations (Nos) | CS | 8 | 8 | 8 | 8 | 8 |
| 7 | Strengthening of Research | From ICAR funds | | | | | |
| 8 | Training and Human Resource Development | To be met from the 5 % Administration Cost | | | | | |
| 9 | Institutional strengthening and support | To be met from the 5 % Administration Cost | | | | | |

**Annexure III**

**List of Fodder Seeds available for sale at Regional Fodder Stations of DADF and Lifting by the States as on 23.05.2016.**

| S.N. | Name of RFS | Crop | Variety | Type of Seed | Quantity available in Kgs | Rates | Fodder Seed lifting | | |
|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | State / UT | kgs | Date |
| 1 | **RFS, Dhamrod** | Sorghum | MP CHARI | T/L | 1480 | 50 | | | |
| | | Sorghum | PC-9 | FS | 2430 | 50 | | | |
| | | Sorghum | COFS-29 | FS | 343 | 350 | | | |
| | | Sorghum | COFS-29 | T/L | 255 | 350 | | | |
| | | Bajara | HC-20 | T/L | 15 | 65 | | | |
| | | **Total** | | | **4523** | | | | |
| | | | | | | | | | |
| 2 | **RFS, Kalyani** | Maize | *+ | TL | 13287 | 45 | | | |
| | | Maize | J-1006 | FS | 15980 | 55 | | | |
| | | Cowpea | BL-2 | TL | 1530 | 85 | West Bengal | 220 | 26.4.2016, 9.5.2016, 13.5.2016, 17.5.2016, 18.5.2016 |
| | | Rice bean | BIDHAN -2 | CS | 3330 | 115 | | | |
| | | Rice bean | BIDHAN-2 | FS | 6650 | 120 | West Bengal | 70 | 9.5.2016, 13.5.2016, 18.5.2016 |
| | | Sorghum | PC-23 | FS | 396 | 65 | West Bengal | 210 | 26.4.2016, 9.5.2016, 18.5.2016 |
| | | **Total** | | | **41173** | | | | |
| | | | | | | | | | |
| 3 | **RFS, Suratgarh** | Bajra | Co (cu) 9 | FS | 2141 | 45 | | | |
| | | Sorghum | PC-23 | TL | 1300 | 40 | | | |
| | | Sorghum | PC-23 | FS | 2700 | | | | |
| | | **Total** | | | **6141** | | | | |
| | | | | | | | | | |
| 4 | **RFS, Hisar** | Chinese cabbage | | TL | 1126 | 70 | | | |
| | | Rye Grass | PB-1 | TL | 894 | 200 | | | |

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| | | Maize | J-1006 | TL | 0 | 50 | | | |
| | | Sorghum | PC-23 | FS | 900 | 45 | | | |
| | | Sorghum | PC-23 | CS | 2175 | 40 | | | |
| | | Sorghum | PC-23 | TL | 600 | 40 | | | |
| | | Bajra | HC-20 | TL | 1000 | 30 | | | |
| | | Teosinte | TL-1 | TL | 200 | 45 | | | |
| | | **Total** | | | **6895** | | | | |
| | | | | | | | | | |
| **5** | **RFS, Chennai** | Sorghum | COFS-31 | TL | 165 | 380 | | | |
| | | Cowpea | EC-4216 | C-I | 2920 | 100 | | | |
| | | Cowpea | EC-4216 | TL | 100 | 90 | | | |
| | | Stylosanthes | SCABRA | TL | 335 | 300 | | | |
| | | Stylosanthes | HAMATA | TL | 1040 | 300 | | | |
| | | Stylosanthes | SCHOFIELD | TL | 35 | 300 | | | |
| | | **Total** | | | **4595** | | | | |
| | | | | | | | | | |
| **6** | **R.F.S, Hyderabad** | Maize | J-1006 | FS | 0 | 55 | | | |
| | | Subabool | Peru | TL | 378 | 80 | | | |
| | | Cowpea | APFC-10-1/B-1 | TL | 70 | 125 | | | |
| | | Stylosanthes | scabra | TL | 122 | 400 | Telenga na | 6 | 13/5/2016 |
| | | Sorghum | COFS29 | TL | 48 | 380 | | | |
| | | Guar | BG-2 | TL | 21 | 125 | | | |
| | | **Total** | | | **639** | | | | |
| | | | | | | | | | |
| **7** | **RFS, Bengaluru** | Maize | AT | FS | 40150 | 50 | Andhra Pradesh | 1000 | 19-05-16 |
| | | Maize | AT | TL | 42229 | 46.5 | Karnata ka | 5000 | 21-05-09 |
| | | Sorghum | PC-23 | TL | 13619 | 62 | | | |
| | | Sorghum | CoFS29 | TL | 1050 | 350 | | | |
| | | Cowpea | EC4216 | TL | 2930 | 70 | Rajasth an | 500 | 19-05-16 |
| | | Guinea | Makueni | TL | 105 | 400 | | | |
| | | Guinea | G2 | TL | 19 | 400 | | | |
| | | **Total** | | | **100102** | | | | |

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| **8** | **RFS, Srinagar** | Tall fescue | Demeter | TL | 479.65 | 550 | | | |
| | | Orchard grass | Commet | TL | 33.5 | 550 | | | |
| | | Orchard grass | Currie | TL | 30.5 | 550 | | | |
| | | Orchard grass | Apunui | TL | 1.6 | 550 | | | |
| | | P. Rye Grass | Ranui | TL | 4.75 | 550 | | | |
| | | Anl. Rye Grass | G selection | TL | 2.9 | 550 | | | |
| | | Anl. Rye Grass | Grasslands Manawa | TL | 297 | 225 | | | |
| | | Sain Foin | Melrose | TL | 43 | 550 | | | |
| | | Crown Vetch | Local | TL | 69 | 550 | | | |
| | | Winter Vetch | Hairy | TL | 2.8 | 550 | | | |
| | | Red Clover | Mount | T/L | 1.5 | 1000 | | | |
| | | **Total** | | | **966.2** | | | | |
| | | | | | | | | | |
| | | **Grand Total** | | | **165034.2** | | | | |
| **Note: F.S. = Foundation Seed; T.L. = Truthfully Labeled Seed.** | | | | | | | | | |
| **Total Seeds- 165.03MT.** | | | | | | | | | |

**Annexure IV**

**Details of fund allocated to States under Feed and Fodder Development Sub-Mission under National Livestock Mission implemented by Department of Animal Husbandry, Dairying and Fisheries (DADF)**

| Name of the State/Uts | 2014-15 | 2015-16 |
|---|---|---|
| Bihar | 343.00 | |
| Chhattisgarh | | 212.61 |
| Gujarat | 1500.00 | |
| Haryana | 490.00 | |
| Himachal Pradesh | 74.99 | |
| Jharkhand | 500.00 | |
| Karnataka | | 422.00 |
| Maharashtra | 157.14 | 500.00 |
| Nagaland | 39.94 | 23.25 |
| Orissa | 178.50 | 72.60 |
| Rajasthan | | 338.817 |
| Sikkim | 7.65 | 15.11 |
| Tamil Nadu | 600.00 | 0.00 |
| Tripura | 5.70 | |
| Uttarakhand | | 101.55 |
| Uttar Pradesh | 321.00 | |
| West Bengal | 550.35 | |
| **Total** | **4762.57** | **1685.937** |

**Annexure V**

## Area Under Fodder Crops And Permanent Pastures And Other Grazing Lands During 2006-07 To 2012-13

**(In Thousand hectares)**

| S. No. | States/UTs | Fodder Crops | | | | | | | Permanent Pastures and Other Grazing Land | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | 2006-07 | 2007-08 | 2008-09* | 2009-10* | 2010-11* | 2011-12* | 2012-13* | 2006-07 | 2007-08 | 2008-09* | 2009-10* | 2010-11* | 2011-12* | 2012-13* |
| 1 | Andhra Pradesh | 212 | 201 | 100 | 86 | 85 | 102 | 87 | 602 | 571 | 569 | 566 | 554 | 553 | 515 |
| 2 | Arunachal Pradesh | - | - | - | - | - | - | - | 18 | 19 | 19 | 18 | 18 | 18 | 18 |
| 3 | Assam | 8 | 8 | 9 | 10 | 10 | 10 | 10 | 160 | 160 | 160 | 160 | 160 | 160 | 160 |
| 4 | Bihar | 16 | 16 | 13 | 18 | 18 | 16 | 24 | 17 | 16 | 16 | 16 | 16 | 16 | 16 |
| 5 | Chhattisgarh | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 857 | 857 | 855 | 859 | 855 | 863 | 861 |
| 6 | Goa | - | - | - | - | - | - | - | 1 | 1 | 1 | 1 | 1 | 1 | 1 |
| 7 | Gujarat | 901 | 850 | 850 | 850 | 850 | 850 | 850 | 853 | 851 | 851 | 851 | 851 | 851 | 851 |
| 8 | Haryana | 684 | 755 | 620 | 420 | 408 | 334 | 432 | 27 | 26 | 30 | 28 | 27 | 28 | 25 |
| 9 | Himachal Pradesh | 10 | 10 | 10 | 11 | 8 | 8 | 8 | 1491 | 1500 | 1503 | 1504 | 1508 | 1508 | 1508 |
| 10 | Jammu & Kashmir | 55 | 61 | 54 | 52 | 53 | 55 | 53 | 128 | 126 | 128 | 120 | 119 | 123 | 114 |
| 11 | Jharkhand | - | - | - | - | - | - | - | 110 | 110 | 110 | 110 | 110 | 110 | 114 |
| 12 | Karnataka | 47 | 35 | 31 | 39 | 35 | 33 | 33 | 934 | 930 | 923 | 914 | 912 | 908 | 908 |
| 13 | Kerala | 5 | 5 | 5 | 5 | 5 | 4 | 5 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 14 | Madhya Pradesh | 539 | 513 | 490 | 476 | 462 | 433 | 406 | 1348 | 1352 | 1337 | 1338 | 1328 | 1321 | 1286 |
| 15 | Maharashtra | 969 | 851 | 1043 | 1001 | 901 | 901 | 901 | 1252 | 1249 | 1246 | 1242 | 1242 | 1244 | 1245 |
| 16 | Manipur | - | - | - | - | - | - | - | 1 | 1 | 1 | 1 | 1 | 1 | 1 |
| 17 | Meghalaya | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| 18 | Mizoram | - | - | - | - | - | - | - | 5 | 5 | 5 | 5 | 5 | 5 | 5 |
| 1 | Nagaland | - | - | - | - | - | - | - | - | - | - | - | - | - | - |

| | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 9 | | | | | | | | | | | | | | | |
| 20 | Odisha | - | - | - | - | - | - | - | 494 | 494 | 494 | 518 | 513 | 508 | 536 |
| 21 | Punjab | 488 | 539 | 573 | 534 | 540 | 522 | 510 | 2 | 3 | 7 | 4 | 4 | 4 | 5 |
| 22 | Rajasthan | 3172 | 3229 | 3627 | 2875 | 3287 | 3386 | 4853 | 1706 | 1703 | 1699 | 1697 | 1694 | 1694 | 1694 |
| 23 | Sikkim | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| 24 | Tamil Nadu | 188 | 172 | 173 | 173 | 195 | 240 | 179 | 110 | 110 | 110 | 110 | 110 | 110 | 110 |
| 25 | Tripura | - | - | - | - | - | - | - | - | 3 | 3 | 2 | 2 | 2 | 2 |
| 26 | Uttarakhand | 36 | 35 | 35 | 35 | 35 | 34 | 32 | 230 | 199 | 199 | 198 | 199 | 199 | 192 |
| 27 | Uttar Pradesh | 872 | 859 | 838 | 831 | 824 | 806 | 800 | 65 | 65 | 65 | 65 | 66 | 66 | 66 |
| 28 | West Bengal | 7 | 4 | 3 | 3 | 4 | 3 | 3 | 6 | 6 | 7 | 6 | 5 | 4 | 3 |
| 29 | A &N Islands | - | - | - | - | - | - | - | 6 | 4 | 5 | 4 | 4 | 4 | 4 |
| 30 | Chandigarh | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| 31 | Dadra & N. Haveli | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 |
| 32 | Daman & Diu | - | - | 0 | 0 | 0 | 0 | 0 | - | - | - | - | - | - | - |
| 33 | Delhi | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 34 | Lakshadweep | - | - | - | - | 0 | 0 | 0 | - | - | - | - | - | - | - |
| 35 | Puducherry | 0 | 0 | 0 | 0 | 0 | 0 | 0 | - | - | - | - | - | - | - |
| **All India** | | **8212** | **8144** | **8477** | **7419** | **7722** | **7738** | **9188** | **10418** | **10362** | **10344** | **10340** | **10305** | **10311** | **10240** |

"-"Not available/not received

"0" relates to the area below 500 hectares

Source: Directorate of Economies & Statistics; Ministry of Agriculture & Farmers Welfare

*provisional

**Annexure VI**

**LIST OF FORAGE GRASSES, LEGUMES, SHRUBS AND TREES FOR GRASSLAND / GRAZING LAND IMPROVEMENT ON AGRO-ECOLOGICAL BASIS**

| Agro-eco Regions | Grasses | Legumes | Shrubs / Trees |
|---|---|---|---|
| Western Himalaya, cold arid with shallow skeletal soils | Agrostis spp., Poa alpina, Trisetum spicatum | Medicago sativa / subsp sativa, M. sativa, subsp fslcuta | Hippophae rhamonides |
| Western plains and Kaccha Penisula, hot arid with desert and saline soils | Cenchrus ciliaris, C. setigerus (Sandy plains), Lasiurus scindicus (Sandy interdunal plains), Panicum turgidum (Sand dunes) Chloris gayana, Sporobolus marginatus (salt affected lands) | Cassia rotundifolia | Acacia nilotica, A. tortilis, Albizia lebbeck, Ailanthes excelsa, Dichrostachys cinerea, Prosopis cineraria, Ziziphus nummularia, p. juliflora, Salvadora oleoides, S. persica (Saline soil) |
| Deccan Plateau, hot arid with red and black soils | Andropogon gayanus, Chrysopogon fulvus (Red soil), Dichanthium annulatum, Bothriochloa intermedia (Black soil) | Clitoria ternatea, Stylosanthes hamata, S. scabra | Acacia nilotica, Albizia amara, A.lebbeck, Desmanthus virgatus, Leucaena leucocephala, Tamarindus indica |
| Northern plains and central highlands inclulding Aravallis, hot semi-arid with Alluvium | Bothriochloa intermedia, Cenchrus ciliaris, Chrysopogon fulvus, Dichanthium annulatum, Sehima neroosum | Macroptilium atropurpureum, Stylosanthes hamata, S. scabra | Acacia nilotica, A. holosericea, Albizia amara, A.lebbeck, A. procera, Azairachta indica, Dichrostachys cinerea, Hardwickia binata, Leucaena |

| | | | |
|---|---|---|---|
| | | | leucocephala, Sesbania grandiflora, S. sesban |
| Central (Malwa) highlands, Gujarat plains & Kathiawar Peninsula, hot semi-arid with red loamy soils | Bothrichloa intermedia, Chloris gayana, Cynodon dactylon, Dichanthium annulatum, Pancium maximum | Arachis hagenbackii, Clitoria ternatea, Stylosanthes hamata, S.scabra | Albizia lebbeck, Artocarpus lackoocha, Dendrocalamus strictus, Gliricidia sepium, Faidherbia albida, Holoptelia integrifolia, Pithecellobium dulce |
| Deccan Plateau, hot semi-arid with shallow and medium black soils | Bothriochloa intermedia, Brachiaria decumbens, Cenchrus setigerus, Dichanthium annulatum, Pennisetum pedicellatum, Panicum maximum | Arachis hagenbackii, Stylosanthes hamata, S. scabra | Acacia nilotica, Albizia procera, Anogeissus pendula, Bauhinia variegata, B. purpurea, Leucaena leucocephala, Moringa oleifera, Pterocarpus marsupium, Sesbania sesban, Terminalia arjuna |
| Deccan (Telangan) Plateau and Eastern Ghats, hot semi-arid with red and black | Andropogon gayanus, Bothriochloa intermedia, Chrysopogn fulvus, Pennisetum pedicellatum, Dichanthium annulatum | Atylosia scrabaeoides, Macrotyloma axillare, Macroptilium atropurpureum, Stylosanthes scabra | Albizia lebbeck, Gliricida sepium, Faidherbia albida, Holopteaia integrofolia, Leucaena leucocephala |
| Eastern Ghats, TN uplands and Deccan (Karnataka) Plateau, hot semi- | Brachiaria decumbens, B. ruziziensis, Cynodon dactylon, Dichanthium | Arachis hagenbackii, A. glabrata, Stylosanthes guinensis, S. | Ailanthes malabarica, albizia falcataria, Erythrina variegata, E. poppygyana |

| | | | |
|---|---|---|---|
| arid with red and black soils | annulatu, Bothriochloa intermedia | hamata | |
| Northern plains, hot sub-humid (dry with Alluvium derived soils | Bothriochloa intermedia, Cynodon dactylon, Chloris gayana, Dicanthium annulatu, Pennisetum pedicellatum | Clitoria ternatea, Macroptilium atropurpureum, Stylosanthes hamata | Albizia stipulata, Desmathus virgatus, Azadirachata indica, Ficus racemosa, Leucaena leucocephala, Robinia, pseudoacacia |
| Central Highlands (Malwa, Bundelkhand & Satpura) noth sub-humid with black and red soils | Andropogon gayanus, Pennisetum pedicellatum (red soil), Bothriochloa intermedia, Chrysopogon fulvus, Sehima nervosum, Dichanthium annulatum (black soil) | Atylosia scarabaeoides, Macroptilium atropurpureum, Stylosanthes hamata, S. scabra | Albizia amara, A. lebbeck, Anogeissus latifolia, A. pendula, Dichrostachys cinera, Hardwickia binata, Leucaena leucocephala |
| Eastern Palteau (Chhatisgarh), hot sub-humid with red | Bothriochloa intermedia, Cynodon dactylon dichanthium annulatum, Panicum maximum, Pennisetum pedicllatum, Setaria sphacelata | Arachis hagenbackii, Stylosanthes hamata | Bauhinia variegata, Dalbergia sissoo, Leucaena leucocephala, Moringa oleifera |
| Eastern (Chhotangapur) Plateau and Eastern Ghats hot sub-humid with red and laterite soils | Andropogon gayanus, Bothriochloa intermeida, chrysopogon fulvus, Pennisetum, pedicellatum, | Atylosia scarabaeoides, Macroptilium atropurpureum, Macrotyloma axillare, Stylosanthes | Artocarpus heterophyllus, A. lakoocha, Leucaena leucocephala, Moringa oleifera |

| | | | |
|---|---|---|---|
| | Urochloa mosambicensis | hamata | |
| Eastern plain, hot sub-humid (moist) with Alluvium derived soils | Brachiaria brizantha, B. decumbens, B. mutica, Cynodon dactylon, Paspalum notatum | Arachis glabrata, A. hagenbackii | Bauhinia variegata, Dalbergia latifolia, D. sissoo, Desmanthus virgatus, Pterocarpus marsupium |
| Western Him alayas, warm sub-humid with brown forest and Podzolic soils | Dactylis glomerata, Festuca rubra, Lolium perenne, Poa spp. | Trifolium pratense, T. repens, Lotus comiculatus | Quercus incana, Robinia pseudoacacia, Grewia optiva, Celtis australis, Fagus sylvatica, Celtis australis, Morus alba |
| Bengal and Assam plains, hot sub-humid (moist) to humid with Alluvium derived soils | Brachiaria decumbens, B. mutica, Paspalum notatum | Desmodium uncinatum, D. heterophyllum | Artocarpus heterophyllus, A. lakoocha, Ficus hookeri, F. nermoralis, Parkia roxburghii, Morus alba |
| Eastern Himalayas, warm per-humid with brown and red soils | Coix lacryma-jobi, Pennisetum clandestinum, Tripsacum dactyloides | Desmodium spp., Pueraria phaseoloides | Celtis australis, Ficus hookeri, F. nemoralis, F. semicordata |
| North-eastern Hills (Purvanchal), warm per-humid with red and laterite soils | Brachiaria decumbens, Pennisetum clandestinum, Tripsacum dactyloides | Arachis spp. Desmodium uncinatum | Dendrocalamus hamiltonii, Parkia roxbrughii, Morus alba., Robinia pseudoacacia |
| Eastern Coastal plain, hot sub-humid to semi-arid | Chloris gayana, Cynodon dactylon, Dichanthium | Stylosanthes guinensis | Ailanthes malabarica, Erythrina variegata, E. poeppigiana, Ficus |

| | | | |
|---|---|---|---|
| with coastal Alluvium derived soils | annulatum, Pennisetum pedicellaum, Stenotaphrum dimidiatum, Urochloa mosambicensis | | retusa |
| Western Ghats and Coastal Plain, hot humid per humid laterite and Alluvium derived soils | Cynodon dactylon, Dichanthium annulatum, Panicum maximum, Pennisetum clandestinum, P. polystachyon, Setaria sphacelata | Clitoria ternatea, Desmodium heterophyllum, Pueraria thunbergiana, Stylosanthes hamata, S. guiensis | Ailanthes malabarica, Erythrina variegata |
| Islands of Andman Nicobar and Lakshdweep hot humid to per humid island with red loamy and sandy soils | Andropogon gayanus, Cynodon dactylon, Cenchrus ciliaris, Pennisetum pedicellatum, p. polystachyon, Brachiaria ruziziensis, Tripsacum laxum | Centrosema pubescens, Clitoria ternatea, Macroptilium atropurpureum, Stylosanthes guianensis, S. scabra | Bauhinia purpurea, Erythrina variegata, Leucaena leucocephala, Trema tomentosa, Pithecellobium dulce, Gliricidia sepium |

**Annexure VII**

**Stratified fodder-production potential of the best fodder crop combinations**

| Best 2-3 rotations at various Centres | Green fodder yield (q / ha) |
|---|---|
| **(1) Jhansi** | |
| 1. Hybrid Napier + Cowpea - *Berseem* + *Sarson* | 2,863 |
| 2. Maize + Cowpea - M.P. Chari - *Berseem* + *Sarson* | 1,972 |
| 3. M.P. Chari - Turnips - Oats | 1,256 |
| **(2) Hyderabad** | |
| 1. Hybrid Napier + Cowpea - Hybrid Napier + Cowpea - Hybrid Napier +*Berseem* | 1,334 |
| 2. Maize + Cowpea - *Bajra* +Cowpea + *Berseem* | 1,267 |
| 3. *Madikattujonna* + Cowpea - Jonna (Ratoon) + Cowpea - *Berseem* | 1,098 |
| **(3) Anand** | |
| 1. Hybrid Napier alone | 2,877 |
| 2. Hybrid Napier + *Guar* - Lucerne | 2,529 |
| 3. Maize + Cowpea - Maize - Cowpea - Oats - Maize + Cowpea | 1,685 |
| **(4) Kalyani** | |
| 1. Maize + Cowpea - *P. Pedicellatum* - Oats | 1,308 |
| 2. Maize + Cowpea - Rice Bean - *Berseem* + *Sarson* | 1,115 |
| 3. Maize + Cowpea + *Jowar* + *Cowpea - Oats* | 884 |
| **(5) Kanker** | |
| 1. Maize + Cowpea - Oats - *Bajra* + Cowpea | 1,026 |
| 2. *Jowar* + Cowpea - *Berseem* + *Sarson* - Maize + Cowpea | 960 |
| 3. *Bajra* + Cowpea - *Berseem* + *Sarson* - Maize + Cowpea | 959 |
| **(6) Pantnagar** | |
| 1. Napier + *Berseem* intercropped and cut at the optimum time | 2,141 |
| 2. Napier + *Berseem* intercropped and cut at the same time | 1,998 |

| | |
|---|---|
| 3. Napier +Lucerne intercropped and cut at the optimum time | 1,960 |
| **(7) Jorhat** | |
| 1. Hybrid Napier alone | 1,442 |
| 2. Maize + Cowpea - Maize - *Jowar* - Oats | 664 |
| 3. Guinea alone | 607 |
| **(8) Hissar** | |
| 1. Napier - *Bajra* Hybrid intercropped with *Berseem* | 2,117 |
| 2. Napier - *Bajra* Hybrid + Lucerne | 1,760 |
| 3. *Berseem* + Japan Rape - *Jowar* + Cowpea - *Jowar* + Cowpea | 1,705 |
| **(9) Coimbatore** | |
| 1. Sorghum + Cowpea - Maize + Cowpea - Maize + Cowpea | 1,107 |
| 2. Maize + Cowpea - Maize + Cowpea - Maize + Cowpea | 1,060 |
| 3. Guinea grass round the year | 935 |
| **(10) Palampur** | |
| 1. Maize + Cowpea - Lucerne + Oats + *Sarson* | 844 |
| 2. Maize + Cowpea - Turnip - Oats + Pea - Cowpea | 833 |
| 3. M.P. Chari + Cowpea - Oats + Pea - Cowpea | 782 |
| **(11) Jabalpur** | |
| 1. Hybrid Napier intercropped with Cowpea - *Berseem* and Cowpea | 1,761 |
| 2. M.P. Chari - Cowpea - *Berseem* + *Sarson* - *Jowar* + Cowpea | 1,686 |

**Based on All-India Coordinated Project for Research on Forage Crops of ICAR**

**Annexure VIII**

**Following are high yielding fodder varieties for improving fodder yield per hectare in respect of existing area under fodder:**

| S. No. | Name of the fodder crop | Name of varieties |
|---|---|---|
| 1 | Maize | African tall, J-1006, Vijay composite. |
| 2 | Sorghum | SSG 59-3, PC-23, PC-9, PC-6, HC-136, MP Chari, CO-FS-29, |
| 3 | Hybrid Napier | CO-4, C-23, NB-21,PNB-84 |
| 4 | Bajra | Giant, L-74, GFB-1, Bajra rajco, HC 20, AVKB-19. |
| 5 | Cowpea | EC-4216,NP-3, |
| 6 | Guar | BG-1, BG-2, BG-3, Bundel-2, HG 365, HG563, RG- 1003 |
| 7 | Berseem | BL-I, BL-10 |
| 8 | Oats | Kent, OS-6, |
| 9 | Chinese cabbage | |

| Type of Land | Rainfed | Irrigated |
|---|---|---|
| (a) Arid Tracts | Jowar, Bajra, Moth, Guar, Lobia | Lucerne, Berseem, Oats, Maize, Jowar, Bajra, Barley |
| (b) Semi-dry | Bajra, Jowar, Lobia, Moth, Guar, Velvet Bean, Field Bean, Guinea grass, *Setaria sphacelata*, Rhodes grass | Jowar, Maize, Lobia, Teosinte, Lucerne, Berseem, Sarson, Turnips, Hybrid Napier, Oats, Sudan grass, Guinea grass |
| (c) Semi-wet | Dinanath Grass, Jowar, Lobia, Rice Bean, Velvet Bean, Teosinte, Sunnhemp | Berseem, Oats, Sudan grass, Hybrid Napier, Guar, Jowar, Maize, Para grass, Rhodes, Setaria |
| (d) Wet regions | Jowar, Dinanath, Rice Bean, Coix | Berseem, Oats, Hybrid Napier, Guinea, Lucerne, Berseem, Sarson, Turnips, Hybrid Napier, Oats, Setaria, Para grass, Jowar |
| (c) Lower hills | Jowar, Lobia, Bajra, Velvet Bean, Field Bean, Guar | Maize, Jowar, Oats, Berseem, Lucerne, Hybrid Napier, Sudan, Setaria, Rhodes |

**Annexure IX**

**State/UT-wise fodder cultivation during 2013-14 :**

| Name of the State/UTs | 2013-14 |
|---|---|
| Andhra Pradesh | 61 |
| Arunachal Pradesh | |
| Assam | 10 |
| Bihar | 21 |
| Chhattisgarh | 1 |
| Goa | |
| Gujarat | 850 |
| Haryana | 583 |
| Himachal Pradesh | 8 |
| Jammu and Kashmir | 53 |
| Jharkhand | |
| Karnataka | 33 |
| Kerala | 5 |
| Madhya Pradesh | 399 |
| Maharashtra | 969 |
| Manipur | |
| Meghalaya | |
| Mizoram | |
| Nagaland | |
| Odisha | |
| Punjab | 521 |
| Rajasthan | 5370 |
| Sikkim | |
| Tamil Nadu | 115 |
| Telangana | 26 |
| Tripura | |
| Uttarakhand | 31 |
| Uttar Pradesh | 800 |
| West Bengal | 3 |
| Andaman and Nicobar Islands | |
| Chandigarh | |
| Dadar and Nagar Haveli | 1 |
| Daman and Diu | 0 |
| Delhi | 1 |
| Lakshadweep | 0 |
| Puducherry | 0 |
| **All India** | **9859** |

**APPENDIX - I**

**STANDING COMMITTEE ON AGRICULTURE**

**(2015-16)**

**MINUTES OF THE 25TH SITTING OF THE COMMITTEE**

*****

The Committee sat on Thursday, the 2nd June, 2016 from 1100 hours to 1245 hours in Committee Room B, Parliament House Annexe, New Delhi.

**PRESENT**

Shri Hukm Deo Narayan Yadav – Chairperson

**MEMBERS**

**LOK SABHA**

2. Shri Sanganna Karadi
3. Shri Nalin Kumar Kateel
4. Smt. Raksha Nikhil Khadse
5. Md. Badaruddoza Khan
6. Dr. Tapas Mandal
7. Shri Ajay Nishad
8. Shri Nityanand Rai
9. Shri Mukesh Rajput
10. Shri Konakalla Narayana Rao
11. Shri Satyapal Singh (Sambhal)
12. Shri Virendra Singh
13. Shri Jai Prakash Narayan Yadav

**RAJYA SABHA**

14. Shri A.W. Rabi Bernard
15. Smt. Renuka Chowdhury
16. Sardar Sukhdev Singh Dhindsa
17. Shri Janardan Dwivedi
18. Shri Vinay Katiyar
19. Shri Modh. Ali Khan
20. Shri Rajpal Singh Saini
21. Shri Ram Nath Thakur
22. Shri Shankarbhai N. Vegad

**SECRETARIAT**

| | | | |
|---|---|---|---|
| 1. | Shri U.B.S. Negi | - | Joint Secretary |
| 2. | Shri Arun K. Kaushik | - | Director |
| 3. | Shri C. Vanlalruata | - | Deputy Secretary |
| 4. | Shri Sumesh Kumar | - | Under Secretary |

2. At the outset the Chairperson welcomed the members to the Sitting of the Committee. The Committee, then, took up the subject 'Steps Taken to Bridge the Gap Between the Demand and Availability of Fodder through Sub-Mission on Fodder and Feed Development', with the representatives of the Department of Animal Husbandry, Dairying and Fisheries.

3. After the introduction, the Chairperson initiated the discussion which was taken forward by the representatives of the Department and the Members of the Standing Committee. The Committee raised several issues/points as briefly mentioned below and sought opinions and views on various issues :

1) Need to work for maximum conservation of crop residue and also take up farming of perennial fodder grass.

2) Need to promote cultivation of Azola fern found to be rich in micro-nutrients as an important alternative to green fodder.

3) Need to focus on coarse grains as an integral part of the National Food Security Mission as farming of coarse grains has constantly declined due to commercial cropping trends in farming. Moreover, coarse grains also form an important component of animal fodder.

4) Shortage of fodder in present times due to change in farming pattern.

5) Earlier, due to increased height of crops, these yielded one third crop whereas the remaining two thirds was used as fodder as opposed to the current situation wherein half the height of the plant comprises crop and as a result, only half is available as fodder.

6) Paddy and wheat form an important base for the fodder which when mixed with green fodder can be fed to animals.

7) Shortage of fodder due to reduced cropping of coarse grains like Jowar, Bajra, Ragi etc.

8) Shortage in the availability of fodder due to present day cropping pattern which yields more of green fodder which is not an adequate substitute to coarse grains.

9) Need to find an alternative to coarse grains as dry fodder.

10) Need for cooperation and collaboration between ICAR and DAHDF to work towards research on developing varieties of animal feed and fodder.

11) Need for fodder development for the upcoming improved breeds of cattle.

12) Channelizing post harvest crop loss towards animal feed and fodder, especially in case of potatoes and tomatoes which are highly perishable in nature and bear huge potential to be developed into fodder for animals.

13) Identification of such crops which are lost post harvest, especially horticulture crops, which can further be diverted towards development of fodder.

14) Development of crop residues into animal feed and fodder.

15) Shortage of animal feed and fodder needs to be tackled through a multi-dimensional approach.

16) Need to discover and develop varieties of plants which can be used as alternatives to fodder.

17) Need to ensure nutrition security in our livestock population as these contribute immensely to the food basket of the country and to identify feed and fodder that may cause harm to animals, when consumed in the long run.

18) To look for innovative ways to collaborate with veterinary graduates, agri-business dealers, agri-clinics etc. in order to support hybrids, foreign breeds of animals etc being introduced to the local climate.

19) Need to develop feed and fodder palatable to the animals.

20) Use of wastelands and vacant lands allocated to railways, defence etc. to grow feed and fodder.

21) Status of availability of fodder in drought prone areas.

22) Diversion of crop residues to drought prone areas to be used as fodder, instead of wasting it by burning.

23) Storage facilities for fodder to be used in adverse times.

24) Aiding the ICAR in reaching out to the general public with their newly developed crop variety which resembles sugarcane and has extremely high nutritive value.

25) Encouraging traditional Indian practice of free range feeding of animals as it has been proven to increase nutritive value of animal produce.

26) To explore the usage of Spirulina, which is an algae with high nutritive value and which can be used as brilliant feed for fish farming, animal fodder etc.

27) Spirulina is a versatile alternative which can be grown and stored after dehydrating it, to be rehydrated and used later during scarcity of fodder and during adverse conditions such as drought.

28) To put in place a warning system for warning livestock owners of impending adversities of weather and to alert them to have enough stock of fodder stored for use in those times.

29) Looking into drought prone areas where tribal livestock owners and farmers are forced to abandon their livestock due to an inability to feed them, thus incurring huge losses and leading to increasing incidents of farmer suicide and also turning the livestock owners into non-performing assets (NPAs) who are unable to repay loans to the Bank.

30) Value addition to crop residue can make it a palatable fodder to the livestock.

31) Need to have in place disaster management plans for livestock population to shield them from disasters.

32) To provide the farmers with up-to-date information with respect to efficient usage of crop residue and crop lost post harvest, thus enabling them to develop fodder for animals using these.

33) Subsidizing fodder cutting and chopping machines.

34) To take up the issue of non-utilization and liquidation of pending utilization certificates (UCs) with the States.

35) States should be encouraged to put in place State Perspective Plans on the lines of the National Perspective Plan.

36) ICAR to be consulted to enable research reach from lab to land.

37) Focus on popularizing techniques of silage making among farmers.

38) Wasteland development and use for growing fodder.

39) Transportation of fodder from areas with excess to those with deficit, via wagons and trains.

40) To utilize the abundance of grasses growing in water logged areas of India and with the help of ICAR develop into nutritious and quality fodder for animals. One such successful example is that of 'Kaas'.

4. A copy of verbatim proceedings has been kept for record.

**The Committee then adjourned**

**APPENDIX - II**

**STANDING COMMITTEE ON AGRICULTURE**
**(2015-16)**

**MINUTES OF THE 30TH SITTING OF THE COMMITTEE**

*****

The Committee sat on Tuesday, the 23rd August, 2016 from 1500 hours to 1700 hours in Committee Room C, Parliament House Annexe, New Delhi.

**PRESENT**

Shri Hukm Deo Narayan Yadav – Chairperson

**MEMBERS**

**LOK SABHA**

2. Prof. Ravindra Vishwanath Gaikwad
3. Shri Nalin Kumar Kateel
4. Md. Badaruddoza Khan
5. Dr. Tapas Mandal
6. Shri Ajay Nishad
7. Shri Mukesh Rajput
8. Shri C.L. Ruala
9. Shri Satyapal Singh (Sambhal)
10. Shri Jai Prakash Narayan Yadav
11. Shri B.S. Yeddyurappa

**RAJYA SABHA**

12. Sardar Sukhdev Singh Dhindsa
13. Shri Janardan Dwivedi
14. Shri Meghraj Jain
15. Shri Vinay Katiyar
16. Shri Modh. Ali Khan
17. Shri Ram Nath Thakur
18. Shri Shankarbhai N. Vegad
19. Shri Darshan Singh Yadav

**SECRETARIAT**

1. Shri U.B.S. Negi - Joint Secretary
2. Shri C. Vanlalruata - Deputy Secretary

2. At the outset the Chairperson welcomed the members to the Sitting of the Committee. The Committee, then, took up the subject 'Steps Taken to Bridge the Gap Between the Demand and Availability of Fodder through Sub-Mission on Fodder and Feed Development', with the representatives of the Department of Animal Husbandry, Dairying and Fisheries.

3. After the introduction, the Chairperson initiated the discussion which was followed by a slide presentation by the representatives of the Department and the discussion was taken forward by them and the Members of the Standing Committee. The Committee raised several issues/points as briefly mentioned below and sought opinions and views on various issues :

1) Reasons behind deficit of fodder and measures taken to overcome this deficit and achieve sufficiency in production of feed and fodder.
2) Dwarf varieties of crops which yield meagre crop residue and resultant fodder material.
3) Loss of grasslands and pastures in villages due to unauthorized encroachment which leaves livestock owners with no grazing grounds for their livestock.
4) Lack of quality seeds of fodder crop varieties such as Jowar, Ragi etc.
5) Research to focus on fodder seeds that yield adequate fodder which is palatable and is of high nutritive value.

6) To focus on production of green fodder crops during Rabi and Kharif seasons and the role of scientific research on the same.

7) Exploring the possibility of grasses such as 'Kaas / Kaasni' growing in water logged areas to be used as animal feed and fodder.

8) Redirecting post harvest losses towards feed and fodder.

9) Steps taken to deal with the issue of lack of monitoring and under utilization of funds and pending Utilization Certificates in States and UTs.

10) Discussions with various stakeholders such as States, UTs, farming community, milk cooperatives and livestock owners etc. before formulating policies, Missions, Sub Missions etc and also seek their views regarding funding of schemes by the Centre.

11) ICAR to work towards discovering ways in which the wastage of crop residue, in the form of burning, is curbed and is diverted as manure to fertilize the fields after being decomposed.

12) Formulating a long term plan to enable fodder to meet increasing population of livestock and enhance their quality of produce.

13) Development of waste based fodder, especially from post harvest losses of food crops and vegetables such as potatoes and tomatoes which suffer huge post harvest losses.

14) Time bound delivery and usage of waste based fodder to avoid accumulation of toxins caused due to decomposition, such as aflotoxins.

15) To explore whether Azolla, Sugar beet etc. can be used as animal feed and fodder.

16) To find ways to divert fruit and vegetable waste, especially Jackfruit waste, Pineapple pulp residue etc. towards developing fodder.

17) Need of firstly satiating the hunger of the existing and upcoming livestock population by providing them with adequate feed and fodder and then focusing on its nutritive value.

18) Reasons for gaping deficit between targets and achievements of schemes.

19) To find ways to destroy aflotoxins in vegetable and fruit waste and to focus on diverting such fruit and vegetable wastes towards fodder, which do not produce aflotoxins or other such toxins.

20) Non-arable, sandy and rocky terrain and water logged areas to be used as avenues for producing fodder.

21) To guide farmers in using dual crop varieties etc. in order to produce an optimum yield of fodder.

22) To look for ways to direct wild grasses growing alongside railway tracks to be used as fodder.

23) To promote optimal usage of easily available crop residue and to use it to feed livestock and reduce deficiency of fodder.

24) Reasons for deficit of fodder in present times despite reduction in population of livestock as compared to earlier times.

25) 'Charai' production to be increased to augment production of milk in milch animals.

26) ’Gau-Pashu' Camps in villages should provide adequate funds for feeding livestock owned by villagers.

27) Need for a National Fodder Production Programme to aid expertise in North Eastern states such as Mizoram, in the field of providing fodder to livestock.

28) Need for experts to visit and appreciate the situation of Mizoram and other NE states which despite having good rainfall experience deficiency of fodder during dry seasons and then show the way forward.

29) Adopt a multi-dimensional approach towards utilizing vegetable waste, most of which comes from potatoes and tomatoes.

30) To utilize traditional wisdom along with the knowledge and experience of the tiller, to approach the issue of deficit of feed and fodder.

31) Special crops growing in regional areas must be utilized in a way that both the food and nutritive requirement of the cattle are met.

32) Formulating a National Action Plan to make fodder cropping a profitable enterprise.

33) Need for ICAR to take up research in the direction of promoting plant varieties such as Israeli Babul, also known as Kamdhenu, which apart from being a rich source of protein to the cattle, is also used as timber in building material etc. More such dynamic plants species should be explored and put to good use.

34) To train more farmers, livestock owners and cooperatives in the technique of silage making.

35) To address the dichotomy arising out of increasing livestock population by artificial means as opposed to the feed and fodder currently available in the country. The Department must work towards bringing sustainability and devising a long term plan to increase the availability of fodder exponentially in proportion to the growing livestock population.

36) To work towards popularizing cropping of coarse grains and dual purpose grains to augment the production of fodder along with fulfilling the objectives of the NFSM.

37) Steps being taken to provide demonstration and training to farmers to use dual crop variety seeds and to increase production of such seeds and their sale from Regional Fodder Stations (RFS).

38) Need for the Department to issue advisories to States and UTs for the expenditure of funds allotted to them by the Centre.

39) To ensure timely issue of SDRF and NDRF funds to States and UTs in adverse times.

40) To work towards providing encroachment free Gochar lands in all the districts of the country.

4. verbatim proceedings has been kept for record.A copy of

**The Committee then adjourned.**

**Appendix-III**

**STANDING COMMITTEE ON AGRICULTURE**

**(2016-17)**

## MINUTES OF THE SEVENTH SITTING OF THE COMMITTEE

*****

The Committee sat on Friday, the 09th December, 2016 from 1000 hrs. to 1050 hrs. in the Chamber of the Hon'ble Chairperson, Standing Committee on Agriculture, Room No. 138 (Third Floor), Parliament House, New Delhi.

**PRESENT**

Shri Hukm Deo Narayan Yadav – Chairperson

**MEMBERS**

**LOK SABHA**

2. Prof. Ravindra Vishwanath Gaikward
3. Shri Sanganna Karadi
4. Shri Nalin Kumar Kateel
5. Md. Badaruddoza Khan
6. Shri Janardan Mishra
7. Shri Devji Patel
8. Shri C.L. Ruala
9. Shri Satyapal Singh (Sambhal)

**RAJYA SABHA**

10. Shri Sambhaji Shahu Chhatrapati
11. Shri Meghraj Jain
12. Shri Mohd. Ali Khan
13. Shri Ram Nath Thakur

**SECRETARIAT**

| | | | |
|---|---|---|---|
| 1. | Shri U.B.S. Negi | – | Joint Secretary |
| 2. | Shri Arun K. Kaushik | – | Director |
| 3. | Smt. Juby Amar | – | Additional Director |
| 4. | Shri C. Vanlalruata | – | Deputy Secretary |
| 5. | Shri Sumesh Kumar | – | Under Secretary |

2. At the outset, Chairperson welcomed the Members to the Sitting of the Committee. Thereafter, the Committee took up for consideration the following draft Reports:

| | | | | | |
|---|---|---|---|---|---|
| *(i) | XXXX | XXXX | XXXX | XXXX | XXXX |
| *(ii) | XXXX | XXXX | XXXX | XXXX | XXXX |
| *(iii) | XXXX | XXXX | XXXX | XXXX | XXXX |

(iv) Draft Report on the Subject 'Steps taken to bridge the gap between the demand and availability of fodder through Sub-Mission on Fodder and Feed Development' of the Ministry of Agriculture and Farmers Welfare (Department of Animal Husbandry, Dairying and Fisheries).

3. After some deliberations, the Committee adopted the draft Reports without any modifications and authorized the Chairperson to finalize and present these Reports to Parliament after getting them factually verified from the concerned Departments/Ministries.

***The Committee then adjourned.***

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*** Matter was not related to this Report**