



STANDING COMMITTEE ON AGRICULTURE
(2019-2020)

SEVENTEENTH LOK SABHA

MINISTRY OF AGRICULTURE AND FARMERS WELFARE
(DEPARTMENT OF AGRICULTURAL RESEARCH AND EDUCATION)

DEMANDS FOR GRANTS (2020-2021)

TENTH REPORT



LOK SABHA SECRETARIAT
NEW DELHI
MARCH, 2020/PHALGUNA, 1941 (SAKA)

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(DEPARTMENT OF AGRICULTURAL RESEARCH AND EDUCATION)

DEMANDS FOR GRANTS (2020-2021)

Presented to Lok Sabha on	03.03.2020
Laid on the Table of Rajya Sabha on	03.03.2020



LOK SABHA SECRETARIAT
NEW DELHI
MARCH, 2020/PHALGUNA, 1941 (SAKA)

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COMPOSITION OF THE STANDING COMMITTEE ON AGRICULTURE (2019-20)

Shri Parvatagouda Chandanagouda Gaddigoudar - Chairperson

MEMBERS

LOK SABHA

2. Shri Afzal Ansari
3. Shri Horen Sing Bey
4. Shri Devendra Singh 'Bhole'
5. Shri A. Ganeshamurthi
6. Shri Kanakmal Katara
7. Shri Abu Taher Khan
8. Shri Bhagwanth Khuba
9. Dr. Amol Ramsing Kolhe
10. Shri Mohan Mandavi
11. Shri Devji Mansingram Patel
12. Smt. Shardaben Anilbhai Patel
13. Shri Bheemrao Baswanthrao Patil
14. Smt. Navneet Ravi Rana
15. Shri Vinayak Bhaurao Raut
16. Shri Pocha Brahmananda Reddy
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18. Shri Virendra Singh
19. Shri V.K. Sreekandan
20. Shri Mulayam Singh Yadav
21. Shri Ram Kripal Yadav

RAJYA SABHA

22. Shri Partap Singh Bajwa
23. Sardar Sukhdev Singh Dhindsa
24. Shri Narayan Rane
25. Shri Kailash Soni
26. Shri Ram Nath Thakur
27. Shri Vaiko
28. Shri R. Vaithilingam
29. Smt. Chhaya Verma
30. Dr. Chandrapal Singh Yadav
31. Shri Harnath Singh Yadav

SECRETARIAT

- | | | | |
|----|---------------------------|---|--------------------------------|
| 1. | Shri Shiv Kumar | - | Joint Secretary |
| 2. | Smt. B. Visala | - | Director |
| 3. | Smt. Juby Amar | - | Additional Director |
| 4. | Shri Nirantar Kumar Singh | - | Assistant Committee
Officer |

INTRODUCTION

I, the Chairperson, Standing Committee on Agriculture, having been authorized by the Committee to submit the Report on their behalf, present this Tenth Report on the Demands for Grants (2020-2021) of the Ministry of Agriculture and Farmers Welfare (Department of Agricultural Research and Education).

2. The Committee under Rule 331E(1)(a) of the Rules of Procedure and Conduct of Business in Lok Sabha considered the Demands for Grants (2020-21) of the Department of Agricultural Research and Education which were laid on the table of the House on 04 February, 2020. The Committee took evidence of the representatives of the Department of Agricultural Research and Education at their Sitting held on 19 February, 2020. The Report was considered and adopted by the Committee at their Sitting held on 02 March, 2020.

3. For facility of reference and convenience, the Observations/ Recommendations of the Committee have been printed in bold letters in Part-II of the Report.

4. The Committee wish to express their thanks to the officers of the Department of Agricultural Research and Education for appearing before the Committee and furnishing the information desired in connection with the examination of Demands for Grants of the Department.

5. 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;
02 March, 2020
12 Phalgun, 1941 (Saka)

P.C. Gaddigoudar
Chairperson,
Standing Committee on Agriculture

(v)

ABBREVIATIONS

AE	Actual Expenditure
AICRP	All India Coordinated Research Project
AINP	All India Network Project
ARYA	Attracting and Retaining Youth in Agriculture
ASRB	Agriculture Scientist Recruitment Board
ATIC	Agricultural Technology Information Centre
AU	Agriculture University
BE	Budget Estimates
CAAST	Centres for Advanced Agricultural Sciences and Technology
CU	Central University
DAC	Department of Agriculture, Cooperation and Farmers Welfare
DARE	Department Agricultural of Research and Education
DoF	Department of Fisheries
DU	Deemed Universities
EFC	Expenditure Finance Committee
FLD	Front Line Demonstration
FPO	Farmers' Producer Organisation
FY	Financial Year
GDP	Gross Domestic Product
IARI	Indian Agriculture Research Institute
ICAR	Indian Council of Agricultural Research
IDP	Institutional Development Plan
IG	Innovation Grants
IPR	Intellectual Property Rights
KVK	Krishi Vigyan Kendras
LRI	Land Resources Inventory
MGMG	Mera Gaon Mera Gaurav
NARS	National Agricultural Research System
NAARM	National Academy of Agricultural Research Management
NIAP	National Institute of Agricultural Economics and Policy Research
NILRED	National Institute of Labour Economics Research and Development
NITI	National Institution for transforming India
NRM	National Resource Management
PVA	Poly Vinyl Alcohol
R&D	Research and Development
RE	Revised Estimates
SAUs	State Agriculture Universitites
SMD	Subject Matter Division
TSP	Tribal Sub-Plan

REPORT

CHAPTER - 1

Introductory

The Department of Agricultural Research and Education (DARE) was established in the Ministry of Agriculture, Government of India in December 1973 to coordinate and promote Agricultural Research and Education in the country. DARE provides necessary Government linkages for the Indian Council of Agricultural Research (ICAR), the premier Research Organization for coordinating, guiding and managing research in areas including crop science, horticultural science, natural resource management, agricultural engineering, animal science, fisheries science, agricultural education and agriculture extension in the entire country.

1.1. The ICAR, as a vibrant organization, continues to generate technologies for sustainable development of agriculture. The ICAR is the guiding and monitoring entity of the country for National Agriculture Research System (NARS) consisting of 103 ICAR research and education institutes, 75 agricultural universities and 717 Krishi Vigyan Kendras spread across the country having responsibility of development of technologies in various fields of agriculture and allied sectors.

1.2. There are eight Subject Matter Divisions, viz. i) Crop Science, ii) Natural Resources Management iii) Horticultural Science, iv) Animal Science, v) Fisheries Science, vi) Agricultural Engineering vii) Agricultural Education, and viii) Agricultural Extension and they are entrusted with the overall responsibility for the preparation, scrutiny, review, and technical supervision and guidance of the research schemes, educational programs and projects within their respective disciplines.

1.3. ICAR has the following mandate:

- Plan, Undertake, Coordinate and Promote Research and Technology Development for Sustainable Agriculture.
- Aid, Impart and Coordinate Agricultural Education to enable Quality Human Resource Development.
- Frontline Extension for technology application, adoption, knowledge management and capacity development for agri-based rural development.
- Policy, Cooperation and Consultancy in Agricultural Research, Education & Extension.

1.4. The goal of ICAR is to promote sustainable and inclusive agricultural growth and development in the country by interfacing education, research and extension initiatives complemented with efficient and effective institutional, infrastructure and policy support, for ensuring livelihood and environmental security.

1.5. The Indian Council of Agricultural Research (ICAR) has been instrumental in making advances in Agriculture Sector in India through its significant achievements in research, extension and education. It has empowered the country to increase the production of food grains by 5.4 times, horticultural crops by 10.1 times, fish by 15.2 times, milk 9.7 times and eggs 48.1 times, since 1951, thus making a visible impact on the National Food and Nutritional Security. The ICAR has played a pivotal role in promoting excellence in Higher Education in Agriculture, while also engaging in innovative areas of science and technology development by its research, which is acknowledged nationally and internationally.

1.6. In the recent years, ICAR has been playing an important and proactive role in the agricultural technology dissemination through its strong network of 717 Krishi Vigyan Kendras and supporting farmers in all possible ways. ICAR is sturdily contributing towards the efforts and initiatives of Government to double the farmers' income by 2022 by its research on farming systems, policy inputs and coordination with state agencies.

A. ANALYSIS OF DEMANDS

1.7. Demand No. 2 pertaining to the Department of Agricultural Research and Education for the year 2020-21 was laid on the Table of Lok Sabha on 04th February, 2020. A brief summary of Demands For Grants under various Heads during the last three years at RE Stage and fund allocated at BE Stage during 2020-21 is as follows-

(Rs In lakhs)

		Revised Estimates			Budget Estimates
		2017-2018	2018-19	2019-20	2020-21
Heads	Description				
	Revenue Section				
1	Salaries	550.00	562.00	500.00	540.00
3	Overtime Allowance(OTA)	0.25	0.25	0.00
6	Medical Treatment	10.75	12.75	8.00	15.00
11	Domestic Travel Expenses	40.00	50.00	40.00	60.00
12	Foreign Travel Expenses	40.00	50.00	20.00	40.00
13	Office Expenses	55.00	50.00	70.00	60.00
20	Other Administrative Expenses	40.00	35.00	40.00	40.00
31	Grants-In-Aid General	284641.52	320498.18	315413.36	337236.24
32	Contributions	694.00	672.00	640.00	630.00
35	Grants For Creation Of Capital Assets	85757.48	109647.82	105017.64	118498.76
36	Grants-In-Aid Salaries	327371.00	363695.00	362868.00	379138.00
...	Total - Revenue Section	699200.00	795273.00	784617.00	836258.00
...	Total - Capital Section
...	Grand Total	699200.00	795273.00	784617.00	836258.00

It is pertinent to mention that DARE/ICAR has only Revenue Section under Budget which has increasing trend for preceding two financial years. The increase in different Heads under Revenue Section during 2018-19 has been due to implementation of 7th Pay Commission from Financial Year 2017-18.

1.8. On being asked by the Committee about the funds proposed by the Department for the fiscal year 2020-21 and during the last two fiscals, the Department in its written reply submitted as under-

"An amount of Rs. 10650.17 crore has been proposed by the Department for the year 2020-21. Department had proposed an amount Rs 8998.41 crore and Rs. 10906.43 crore for the years 2018-19 and 2019-20 respectively. However, Ministry of Finance has allocated Rs. 7952.73 crore, Rs. 7846.17 crore and Rs 8362.58 crore (BE) during 2018-19, 2019-20 and 2020-21 respectively keeping in view the overall allocation to other Departments."

1.9. The allocations to Department of Agricultural Research & Education has been increasing over the years and the Department is receiving higher proportion of allocations *vis-à-vis* other Research Departments such as Dept of Health Research, Dept of Science and Technology, Dept of Scientific and Industrial Research. However, the allocations remain still far lesser *vis-à-vis* Department of Higher Education, Food & Public Distribution and Fertilizers. Moreover, during the course of evidence, the representatives of the Department submitted -

"...जो हमारा बजट है, उसका ज्यादा हिस्सा सैलरी में जाता है। 75 पर्सेंट सैलरी में जाता है और बाकी 25 पर्सेंट से हम शोध कर रहे हैं। उसको थोड़ा बढ़ाने की आवश्यकता है।..."

1.10. Further, when the Committee queried that whether the Department have taken up this issue with the Ministry of Finance (Department of Expenditure) to ensure that their share in total allocation is brought at par with other Departments, the Department in its written reply submitted -

"The Department of Agricultural Research and Education is continuously pursuing with Ministry of Finance for enhancing the allocation for agriculture Research and Education to the tune of 1% Agricultural GDP. "

1.11. Elaborating further, regarding requirement of funds during the course of evidence, the representative of the Department submitted the following-

"...हम उसमें 500 करोड़ रुपये इसलिए मांग रहे हैं कि हम जो नए कार्यक्रम शुरू करेंगे और हमारे पास जो चुनौतियां हैं, ताकि हम उनका सामना कर सकें। हमको कम से कम उतना ही मिल जाए। हम तो यह चाहते हैं कि एग्री जीडीपी का एक प्रतिशत मिल जाए, जो लगभग 12,000 करोड़ रुपये होते हैं। अगर वह हमें मिल जाए, हम बाकी ग्लोबल कम्पैरिज़न में काफी पीछे भी रहेंगे, फिर भी अगर हमारी रिसर्च के लिए हमें एग्री जीडीपी का एक प्रतिशत मिल जाए, तो बहुत बड़ी बात होगी। मेरा यही निवेदन है कि एग्री जीडीपी का एक प्रतिशत जो लगभग 12,000 करोड़ रुपये हैं, अगर वह मिल जाएगा, तो जो काफी चीजें हैं, जो कमियां हैं, वे पूरी हो सकती हैं।..."

1.12. The details of Allocation and the Actual Expenditure during the year 2017-18, 2018-19 and 2019-20 and the allocation at BE stage for 2020-21 are reproduced as follows:

(Rs. In crore)

Year	BE	RE	Actual Expenditure
2017-18	6800.00	6992.00	6590.64
2018-19	7800.00	7952.73	7615.70
2019-20	8078.76	7846.17	5689.88*
2020-21	8362.58	-	-

*upto December, 2019

1.13. When the Committee categorically desired to know the reasons for reduction in allocation at RE stage during 2019-20 and details of demands put up by the Institutes for enhanced funds at RE Stage during 2019-20, the Department in its written reply submitted -

"The reduced RE for 2019-20 in comparison to the BE for 2019-20 is due to over all cut by Ministry of Finance. The Total Consolidated Demand of DARE for RE 2019-20 was Rs. 10906.43 crore. Division wise proposal for RE 2019-20 is shown below-

Details of demands put up by Department for enhanced funds at RE Stage

*Upto december 2019

1.14. During the course of evidence, on being asked about the impact of reduction at RE stage to Rs. 7846.17 crore from Rs 8078.76 crore at BE Level during 2019-20, the

(Rs. in crore)

S. No.	Name of the Scheme	Revised Estimate 2018-19		Revised Estimate 2019-2020	
		Proposed	Allocated	Proposed	Allocated
1.	Crop Science Division	776.00	651.99	654.23	635.00
2.	Horticulture Division	206.07	165.75	225.74	173.61
3.	Agricultural Extension Division	310.66	205.53	349.92	221.15
4.	Agricultural Education Division	748.74	525.59	563.67	450.00
5.	Agricultural Economics & Statistics Division	34.11	27.66	37.62	29.76
6.	Agricultural Engineering Division	73.71	59.50	66.94	64.02
7.	NASF	50.75	50.75	55.59	50.00
8.	NRM Division	221.97	148.24	209.11	158.83
9.	CRAI/NICRA	49.77	44.21	50.86	46.00
10.	Animal Science Division	365.04	288.98	396.78	310.00
11.	Fisheries Division	161.79	132.34	173.82	142.39
12.	NAHEP	283.15	207.89	214.21	207.85
13.	ICAR Headquarters	5167.68	5056.08	7231.62	4868.80
14.	DARE	548.98	388.22	676.32	488.76
	TOTAL	8998.42	7952.73	10906.43	7846.17

representative of the Department replied-

"...We have serious impacts. कुछ संस्थाओं के पास बिजली और पानी देने के लिए पैसे नहीं हैं, इसलिए हमें कुछ काम बंद करना पड़ रहा है। इसे रिएप्रोप्रिएशन करके जहां काम कम कर

सकते हैं या नहीं करके अगले साल करेंगे, जहां आवश्यकता है, दे रहे हैं। हमने इस तरह से चलाने की कोशिश की है। ..."

1.15. When queried about the quantum of funds spent by the Department quarter-wise during the last three fiscals in absolute terms and in terms of percentage of the total Budgetary Allocations, the Department submitted -

Quarter-wise utilization of funds is as follows:

(Rs in crores)

Quarter	2017-2018	% of RE 2017-18	2018-2019	% of RE 2018-19	2019-2020	% of RE 2019-20
Q1 (April-June)	1062.33	15.19	1683.23	21.16	1234.43	15.73
Q2 (July-Sept)	1698.19	24.28	2076.73	26.11	2396.16	30.54
Q3 (Oct-Dec)	1570.79	22.46	2006.63	25.23	2059.29	26.24
Q4 (Jan-March)	2259.33	32.31	1849.11	23.25	-	
TOTAL	6590.64	94.26%	7615.70	95.76%	5689.88*	72.51%

*Up to December 2019**

B. ALLOCATION UNDER SCHEME HEAD

1.16. The details of Scheme -wise outlay of the Department for all Major Heads for 2020-21 are as follows-

(Rs in crore)

Major Head	Budget Estimates 2020-21
Central Sector Schemes	
Natural Resource Management	174.00
Climate Resilient Agriculture Initiative	52.00
Agricultural Engineering	70.00
Crop Science	715.50
Horticulture	194.00
National Agricultural Science Fund	55.00
Animal Science	330.00
Fisheries Science	156.00
Agriculture Extension	242.50

Agricultural Universities and Institutions	480.00
Economics, Statistics & Management	30.00
National Agricultural Higher Education Project (EAP)	230.00
Total Sector Schemes	2729.00

1.17. The year-wise details of Budget Estimate (BE), Revised Estimate (RE) and Actual Expenditure (AE) under Scheme Head are as follows:

(Rs. in Crore)

Year	BE	RE	Actual Expenditure	Percentage Utilisation of BE
2017-18	2166.46	2166.46	1878.14	86.69%
2018-19	2914.77	2508.43	2271.41	77.91%
2019-20	2699.00	2488.61	1557.60*	-
2020-21	2729.00	-	-	--

*Actual Expenditure upto Dec 2019

1.18. It is evident that the allocation at RE stage was reduced to the tune of Rs. 406.34 cr. and Rs. 210.39 cr. during 2018-19 and 2019-20 respectively. When the Committee enquired about its impact on implementation of the Schemes due to decrease in allocation at RE during the aforesaid years, the Department submitted -

"Reduced allocations at RE Stage have led to downsizing of some of the programs and postponed some activities for later years. Division has made efforts to ensure that activities/programs of high priority do not suffer due to reduced allocations and also made all out efforts to achieve the set physical targets and set its priorities according to the available funds"

1.19. Further, when the Committee desired to have the reasons for the under utilization of the Budgetary Allocation during preceding fiscals, the Department stated -

"Under-utilization of funds in 2017-18 was mainly due to the approval and the sanction of the SFC/ EFCs of the schemes, which were conveyed mostly in the later half of the financial year, and hence funds allocated for non-recurring items (works and equipments) could not be utilized. In 2018-19, utilization stands at

90.54% with respect to actual allocations (RE). Department has inbuilt mechanism to ensure qualitative and optimal utilization of target funds through efficient and effective monitoring and management of allocations, which is enforced throughout the year through Heads (Deputy Director Generals) of the schemes."

C. NON -SCHEME HEAD

1.20. The Year-wise Budget Estimate (BE), Revised Estimate (RE) and Actual Expenditure (AE) under Non- Scheme Head are as follows:

(Rs. in Crore)

Year	BE	RE	Actual Expenditure
2017-18	4633.54	4825.54	4712.49
2018-19	4885.23	5444.30	5344.21
2019-20	5379.76	5357.56	4132.28
2020-21	5633.58		

1.21. On being again enquired about under utilization of funds during the year 2017-18 and 2018-19 and the latest utilization figures for the year 2019-20, the Department in its reply submitted-

"The EFC/SFC for the 3-Year Action Plan could not be finalized during 2017-2018 resulting in under-utilization during 2017-2018. During 2018-2019, allocation was made under SCSP component which could not be utilized as provision for SCSP was not made in EFC/SFC. The Latest utilization figure under non-scheme as on 31st January 2020 is Rs. 4477.24 crores"

D. SURRENDER OF FUNDS

1.22. When queried about quantum of funds surrendered by the DARE during the years 2017-18 and 2018-19, the Department in its reply submitted -

"Department had surrendered Rs. 399.27 crore and Rs. 321.33 crore during 2017-2018 and 2018-19, respectively."

1.23. During the course of evidence, on being asked regarding reasons for surrender of funds, the representatives of the Department submitted-

"...2017-18 में ईएफसी बने, एप्रूवल प्रॉसेस में समय लगा। कहीं इक्विपमेंट खरीदना था, जब एप्रूवल आया तो समय नहीं मिला कि इसे पूरा खर्च किया जा सके। ईएफसी एजुकेशन का एप्रूवल ही नहीं हो पाया, जिसका मई 2019 में जाकर एप्रूवल हुआ। ईएफसी एप्रूवल नहीं हुआ, कैबिनेट में जाता है, कई चीजें होती हैं, वह उस स्टेज में नहीं हो पाया, इसलिए अभी इसका पैसा बचा है। 2018-19 में एससी कम्पोनेंट नहीं था, ईएफसी में प्रावधान नहीं था, हमने प्रावधान भी नहीं किया था। 2018-19 में बता दिया गया कि आपको एससी कम्पोनेंट में करना है जबकि कोई कार्यक्रम ही नहीं था। पैसे को ईयर मार्क कर दिया गया लेकिन खर्च करने की कोई व्यवस्था नहीं थी। इस कारण से यह पैसा बचा है।..."

E. TRIBAL SUB-PLAN

1.24. As per the norms of Government, 4.3% of Scheme Allocation is earmarked for Scheduled Tribal Component erstwhile TSP. The Details of allocation of funds to DARE under Scheduled Tribal Component (STC) during the last three years and current year is as follows;

(Rs. in Crore)

Year	BE	RE	AE*	%Expenditure
2017-2018	75.00	93.16	93.16	100.0
2018-2019	125.82	106.70	106.70	100.0
2019-2020	114.81	105.91	86.10**	75%

* As per PAO Figures. ** Expenditure shown up to Dec 2019 w.r.t BE.

1.25. On being asked to provide details of funds allocated for the financial year 2020-21 under this Scheme and the latest utilization figures for the current fiscal, the Department submitted -

"The allocation proposed is of Rs.118.65 crore under this Scheme in BE 2020-21. The total expenditure incurred under the Scheme up to 31.12.2019 is Rs.86.10 crore against BE 2019-20 of Rs.114.81 crore."

1.26. Further, regarding allocations of funds under this Head, the Department added-

"A number of Institutions are located in tribal areas which carry out their activities especially for the welfare of tribal. Allocation is made to these institutes located in tribal areas in various states. In addition, various institutes carry out collaborative projects in tribal area where they utilize the TSP funds for the benefit of these areas, augmenting the means of livelihood. KVKs are also involved in providing financial assistance to tribal population in such areas through various schemes such as FLDs, etc.

Moreover, the Department has also informed that 62,245, 12,968 and 35,697 training programmes, workshops and other awareness activities were undertaken under Tribal sub plan during 2016-17, 2017-18 and 2018-19, respectively. The interventions undertaken under STC component have led to adoption and spread of nutritional garden in some tribal areas and training for mushroom production and post-harvest processing. Farmers are being made aware about benefits of scientific housing of animal, adoption and spread of improved breeds of animals and poultry, and health care of pig, production of silk yarn etc. Inputs are distributed i.e. goats, pigs, spinning machine, honey bee colonies, seed etc. to uplift the economic conditions of tribal farmers through participation in production activities"

1.27. The Department in its Annual Report (2019-20) has submitted that Tribal welfare Programmes were supported in 11 Agricultural Universities with financial support of Rs.

29.94 crore. The major activities were promotion of agricultural centric sustainable livelihood security, sericulture, agro-technological intervention, modern goat farming, waste management through vermicomposting, quality planting material production in horticultural crops, agroforestry and non-timber forest product, bee keeping, backyard poultry, sustainable livestock production, small ruminant productivity, etc. in different Tribal Districts of Assam, Bihar, Chhattisgarh, Gujarat, Jharkhand, Jammu and Kashmir, Madhya Pradesh, Odisha and West Bengal.

F. PRIVATE INVESTMENT IN AGRICULTURE SECTOR

1.26 Private Investment in Agriculture Sector is the need of the hour and the government is looking at abetting it to elevate farmers from their current distress. Most of the private investment is for in-house research of plant breeding, pesticides, food processing, animal health and farm machinery. These private R&D Organizations are mostly active in seeds and agricultural R&D, Private R&D both for profit and non-profit, has been active in Agriculture since popularization of tractors, fertilizers and pesticides. There were some isolated efforts by private sector to multiply and distribute seeds of high yielding varieties. Private R&D for-profit, however, has increased over time with expanding markets for inputs and commercialization of Indian agriculture. Participation of private sector in the R&D for inputs, agro-processing and farm machinery etc need to be encouraged. IPRs regime shall be an important instrument to facilitate research partnership which involves exchange of material, knowledge and technology. Farmers' Organizations and large farmers growing horticultural crops and livestock may pay for extension and thus may attract private investment. Re-orienting the extension system to current trends of diversification and commercialization of agriculture are need of the

hour. This implies greater participation of private sector and enhancing knowledge-intensity of agriculture.

1.27 On being asked by the Committee about the steps taken by the Department to encourage private investment in the Agricultural Research, the Department in reply submitted -

"Agricultural research system in India is one of the world's largest in terms of scientific and supporting staff. Possibilities of coordinated public and private spending for initiatives necessary to feed 1.6 billion people by 2050 need to be explored.

- Farm Management Systems can be established where agricultural scientists from public research institutions and universities can provide free advisory services. Companies can raise funds to manage privately-held farmlands. Indian Government in this regard is taking various steps to encourage a well-organized, efficient and result-oriented agriculture research and education system so as to introduce technological change in Indian agriculture.
- Upgradation of Agricultural Education and its orientation towards uniformity in education standards, women empowerment, user-orientation, vocationalization and promotion of excellence will be the hallmark of the new policy.
- The regionalization of Agricultural Research, based on identified agro-climatic zones, should be accorded high priority. Application of frontier sciences like bio-technology, remote sensing technologies, pre and post-harvest technologies, energy saving technologies, technology for environmental protection through national research system as well as proprietary research need to be encouraged.
- The endeavour will be to build a well-organized, efficient and result-oriented agriculture research and education system to introduce technological change in Indian agriculture. Upgradation of agricultural education and its orientation

towards uniformity in education standards, women empowerment, user-orientation, vocationalization and promotion of excellence will be the hallmark of the new policy."

CHAPTER - II

SCHEMATIC ANALYSIS

2.1. The research, extension and education in ICAR are organized under eight Subject Matter Divisions (SMDs). The eight Subject Matter Divisions are i) Crop Science, ii) Natural Resources Management iii) Horticultural Science, iv) Animal Science, v) Fisheries Science, vi) Agricultural Engineering vii) Agricultural Education, and viii) Agricultural Extension. These SMDs are entrusted with the overall responsibility for the preparation, scrutiny, review, technical supervision and guidance of the schemes and programmes/projects within their respective disciplines. They are supported with a network of Research Institutes/Schemes in their respective areas and have well placed Institutional Mechanism of linkage with the State Agricultural Universities.

A. CROP SCIENCE

2.2. Crop Science Division undertakes research programs in the areas of management of genetic resources, crop improvement, crop management (production and protection). The genetic resource programs include plant, microbial and insect genetic resources. The focus of Crop Science Programme is on genetic enhancement of field crops for yield, tolerance to biotic and abiotic stresses and quality and that released of 254 high yielding stress tolerant varieties in different field crops. Different management measures for controlling insect-pests damage in crop have been devised and various molecules are identified, tested and recommended for plant protection. The emphasis is also given on the development of nutrient and water use-efficient genotypes in different field crops using modern tools including genomics, phenomics, etc. In addition, Post graduate teaching in different disciplines of agricultural, basic and social sciences is also an important component. Technologies developed for various

crop based programs were carried to Farmer's field through various extension programs and activities, and a total of 15920 Frontline Demonstrations on improved varieties and Crop Management Technologies were organized.

2.3. Under the Head of Crop Science, the status of allocation and utilization of funds is as follows:-

(Rs in crore)

YEAR	BE	RE	Actual Expenditure
2017-18	387.41	399.66	369.66
2018-19	776.00	651.99	607.71
2019-20	701.53	635.00	324.84*
2020-21	715.50		

*Upto december 2019

2.4. It may be seen from the above table that the funds have been reduced at RE stage during the year 2018-19 and 2019-20 and for 2020-21, the allocation at BE stage has been marginally increased. When asked to furnish reasons for drastic reduction of Rs. 66.53 crore in allocations at RE stage during 2019-20 and the impact on Research work in the Institutes under Crop Science Division due to reduced allocation, the Department in reply submitted before the Committee-

"The reduced RE for 2019-20 in comparison to the BE for 2019-20 is due to overall cut by Ministry of Finance. Reduced allocations at RE stage have led to downsizing of some of the programs and postponed some activities for later years. Division has made efforts to ensure that activities/programs of high priority do not suffer due to reduced allocations and also made all out efforts to achieve the set physical targets and set its priorities according to the available funds"

2.5. On being queried regarding funds proposed by the Department for Crop Science Division during 2019-20 and 2020-21, the Department submitted as under-

"Department has proposed Rs. 654.23 crore for RE 2019-20 and Rs. 906.19 crore for the BE 2020-21 for Crop Science Division."

2.6. The Department in its Annual Report (2019-20) has stated that since 1965, 5163 Improved Field Crop Varieties have been developed which include 2,625 of cereals, 864 of oilseeds, 966 of pulses, 187 of forage crops, 364 of fiber crops, 122 of sugarcane and 35 of potential crops. During the reporting period a total of 220 varieties have been Notified and released for commercial cultivation.

2.7. On being asked as to whether all Institutes under Crop Science Division have been able to achieve targets set for development of New Crop Varieties and Hybrids, the Department in its reply stated-

"The Crop Based institutes along with respective AICRPs have succeeded in achieving the targets in terms of development and release of varieties and hybrids in field crops. During last five years (2014-2020) more than targeted varieties of field crops have been released. A total of 1234 high yielding climate resilient crop varieties/ hybrids of field crops have been released and notified during the period for cultivation in different agro-ecologies of the country"

2.8. Further, when the Committee wanted to know about any system in place to monitor the performance and productivity of New Crop Varieties and Hybrids released by the Institutes, the Department submitted -

"Front Line Demonstrations of newly developed varieties and hybrids, is done in farmers' field to assess the performance and productivity of these varieties and hybrids outside the research farm. Survey and surveillance activities are regularly carried to check the performance and susceptibility of varieties to diseases and insect-pests. High yielding varieties and hybrids, after their release, find place in the seed chain based upon the indents of different seed multiplying agencies.

Performance monitoring is done for adoptability and popularity of variety is its breeder seed demand through the DAC&FW indents. Higher the indent of variety in comparison to its other contemporary varieties in seed chain is an indicator of its popularity and acceptability among the framers. The feedback received from farmer oriented programmes after demonstrating the varieties also indicates the performance. The impact analysis of the varieties is taken up by the social sciences divisions of ICAR Institutes. Such studies are regularly conducted by the Institutes which gives the real picture of performance of ICAR varieties."

Development of Biofortified Varieties

2.9. The development of biofortified varieties of different crops is a sustainable way to alleviate malnutrition in the country. During the last three years, total 52 varieties of bio-fortified varieties have been developed out of which 44 varieties have been released since 2017. A target of 20 varieties was set which has been achieved successfully during last three years. When queried regarding number of Bio-Fortified Seeds developed by ICAR that have been commercialized till date and the efforts made by the ICAR to enhance awareness about Bio-fortified Seeds among farmers, the Department in its written reply stated to this effect as follows -

"About 30 varieties have been commercialized by providing the breeder seed of these varieties to the various central and state government seed producing agencies. During last three years a total 3484 q of breeder seed of 14 varieties have been produced and distributed to the seed producing agencies (Annexure-I). In addition, around ten varieties of different crops have been licensed to more than 100 various private seed producing agencies too for faster multiplication and distribution among the farmers"

B. MANAGEMENT OF NATURAL RESOURCES

2.10. Under the Head of Natural Resource Management, the allocation for 2020-21 at BE stage has been increased in comparison to 2019-20. The details of status of allocation and utilization of funds are as follows:-

<i>(Rs. in crore)</i>			
YEAR	BE	RE	Actual Expenditure
2017-18	167.68	167.68	129.19
2018-19	174.39	148.24	153.80
2019-20	159.48	158.83	102.37*
2020-21	174.00	-	-

2.11. When asked about the plans of the Department to utilize the increased allocation during 2020-21, the following has been submitted by the Department in its reply-

"The increased allocation during 2020-21 will be appropriately utilized amongst 29 constituent Units ICAR Institutes and All India Coordinated Research Projects) of NRM division as per their respective mandate."

2.12. On being asked by the Committee regarding funds proposed for the Division and latest utilization figures for the year 2019-20, the Department submitted-

"Rs. 174.00 lakh have been proposed by the Department to NRM Division for BE 2020-21. Rs. 111.93 lakhs have been utilized out of Rs. 158.83 crore as on 31st January, 2020."

2.13. Natural Resources Management Division covers the area of sustainable management of natural resources. It is vital as agricultural development with positive growth and long term sustainability cannot thrive on a deteriorating natural resource base. Accordingly, the Division is conducting research in farmers' participatory mode addressing issues at ground level to develop location specific, cost effective, eco-friendly, climate resilient technologies keeping in view the farmers' resource availability, traditional/ indigenous technology knowhow and grass-root farm innovations to enhance agricultural production, productivity and profitability in the country.

2.14. During the evidence, when the Committee desired to know about the preparedness of the Department to face the challenges due to Global Warming, the representative of the Department replied -

"...सर, यह बिल्कुल सही बात है कि ग्लोबल वार्मिंग की वजह से हमें बहुत बड़ी हानि पहुंचने वाली है, अगर हमारी तैयारी पूरी नहीं हुई। यह बिल्कुल सच है। हमारी शोध भी यही बताती है, क्योंकि हमने कार्बन डाई आक्साइड बढ़ाकर देखा है, टेम्परेचर बढ़ाकर देखा है कि गेहूं के ऊपर क्या इम्पैक्ट है, यह सब हमने देखा है। इसकी तैयारी के बारे में मैं थोड़ा सा बताना चाहूंगा, एक तो हम यह कर रहे हैं कि क्या हम इस तरह की फसल ला सकते हैं, पहचान सकते हैं और जो हमारी बेसिक किस्में हैं, उनमें से छांट कर इस्तेमाल कर सकते हैं कि जिनमें सहनशीलता हो और टेम्परेचर बढ़ने के बावजूद भी काम कर जाएं। कुछ ऐसी किस्में भी लाए हैं।

दूसरी बात, हमारी रिसर्च का फोकस हो गया है कि जो भी किस्म लाएंगे, उसमें कुछ न कुछ सहनशीलता होनी चाहिए, चाहे बीमारी की हो, कीड़ा की हो, हाई टेम्परेचर को सहने की क्षमता हो, जैसे गेहूं में बढ़ता है, तो यह होना चाहिए। यह कंपल्सरी करके हमारे हजारों बीज की किस्में इसी तरह की हैं, जिनमें सहनशीलता है।

I will explain it to you, Sir. मैं बताना चाहूंगा कि खाली किस्मों से बात नहीं बनेगी। बात यह है कि पानी की भी संरचना और जो व्यवस्था होनी चाहिए, वह भी उसी तरह से होनी पड़ेगी। जिस तरह से हम पानी का इस्तेमाल कर रहे हैं, खासकर पंजाब में, तो वह अनसस्टेनेबल है। अंडर ग्राउंड वाटर उठाते हैं और इस्तेमाल करते हैं। इससे वहां की जमीन भी खराब हो रही है। वहां नमकीन जमीन बढ़ती जा रही है। यह एक बड़ी समस्या है। अगर इसका इस्तेमाल सही से नहीं होगा, तो कोई किस्म हमारे काम में नहीं आएगी। यह एक बात है, जिसे मैनेजमेंट वहां कर रही है। ऐसी जितनी चीजें हैं, मशीन्स हैं, वैराइटी है, सही समय पर बीज चाहिए, फॉडर भी चाहिए, इन सबको मिलाते हुए हम जो 151 विलेज बनाए हैं, उसका डिमांड स्ट्रेशन करके सारे गांव को क्लाइमेट रजिस्टर्ड बनाने की जो व्यवस्था है, इसमें राज्य सरकारें आगे आ रही है, इसमें मैनेजमेंट को लेते हुए गांव में रिस्क मैनेजमेंट कमेटी बनाए हैं, फॉडर बैंक बनाए हैं, 151 में यह करके डिमांड स्ट्रेशन किए हैं और इसको सारे देश में रिप्लीकेशन करने की आवश्यकता है।..."

2.15. The Department in its Annual Report (2019-20) has submitted that Land Resource Inventory (LRI) on 1:10,000 scale for 27 Aspirational district of India was prepared to work out Block level land use planning. It has also been submitted that soil

inventory and characterization in 06 Blocks (1:10,000) has been completed during 2019-20.

2.16. On being specifically asked by the Committee since when the Department has been working on LRI on 1:10,000 Scale and the number of Districts/Blocks covered till date, the Department in its written reply has stated as follows-

"ICAR-National Bureau of Soil Survey & Land Use Planning (NBSS&LUP), Nagpur is involved in developing Standard Protocols for districts/ blocks level land resource inventory GRD at 1:10,000 scale using geo-spatial techniques for Agricultural Land Use Planning since September 2014. So far, 292 Blocks have been covered which include 68 Blocks in Aspirational Districts"

2.17. Replying to a query during the evidence regarding coverage of only six States in five years for Soil Survey and Land Resource Inventory, the representative of the Department submitted-

"...लैंड रिसोर्स की जिस मेथेडोलॉजी से चल रहे हैं, उस मेथेडोलॉजी से काफी समय लगेगा, यह हमने कहा था। लेकिन, हम स्टेट गवर्नमेंट के साथ सम्पर्क में हैं। कई राज्यों से हमारी बातचीत चल रही है। उनके द्वारा उनकी व्यवस्था को इस्तेमाल करके हम इसकी स्पीड को बढ़ाना चाहते हैं। अगले पांच सालों में सारे देश को इसमें कवर करना चाहते हैं। इसके लिए कोई अल्टरनेट मेथेडोलॉजी की जरूरत होगी तो वह भी हम करेंगे।..."

C. ANIMAL SCIENCE

2.18. Animal Science Division coordinates and monitors research and education in the area of livestock and poultry through a network of research institutes and their Regional Centers. Division is carrying out research on characterization and registration of new populations as breeds; need based *in-situ* and *ex-situ* conservation of livestock and

poultry breeds / varieties / strains; genetic improvement of livestock and poultry for various qualitative and quantitative traits as well as development of new strains with improved productivity; development of vaccines and diagnostics for diseases as well as for effective monitoring, surveillance and forecasting of diseases, development of kits for detection of adulterants in milk, meat for quality assurance and development of new / improved processes for value addition of milk, meat and fibre. The details of Allocation under Animal Science Division are as follows:

(Rs. in crore)

Year	BE	RE	Actual Expenditure
2017-18	271.97	271.97	252.77
2018-19	340.00	288.98	269.44
2019-20	310.98	310.00	190.92*
2020-21	330.00		

*Upto december 2019

2.19. The Department in its Annual Report (2019-20) has stated that the Indigenous Cattle Breed Improvement Programme covers Gir, Kankrej and Sahiwal breeds. Nine each of Gir and Kankrej, and eight Sahiwal bulls of fourth set were inducted for progeny testing. During the period, 2,145, 2,466 and 836 inseminations were carried out with the conception percentages of 47.69, 45.01 and 40.78 in Gir, Kankrej and Sahiwal animals, respectively. During the year, 449 Gir, 423 Kankrej and 141 Sahiwal daughters were born. The average age at first calving in Gir, Kankrej and Sahiwal were 1,420.0, 1,238.42 and 1,326.94 days, respectively. The first set of eight Sahiwal bulls were evaluated based on the first lactation 305-days milk yield of their daughters and the overall expected breeding value was $1,957.76 \pm 51.14$ kg with a range of 1,940.92 (–16.84 kg) to 1,989.75 kg (+31.98 kg).

Notification of Indigenous Animal Breeds

2.20. The total number of Indigenous Breeds now registered in the country are 184. Government of India on the request of this Department, issued a Gazette Notification on 14 October 2019 recognizing 184 Registered Indigenous Breeds of Livestock and Poultry. The Gazette Notification provides legal support to Intellectual Property Rights (IPRs) to the registered breeds and for developing mechanism for sharing benefits among the animal keepers.

Species	Before 2014	2014-19	Total
Cattle	37	6	43
Buffalo	13	3	16
Goat	23	11	34
Sheep	39	4	43
Camel	8	1	9
Horse & Ponies	6	1	7
Pig	2	6	8
Chicken	15	4	19
Donkey	1	1	2
Yak, Geese & Duck	0	3	3
Total	144	40	184

2.21. During the evidence, responding to a query by the Committee regarding the reasons for less yield of milk from indigenous breeds of cattle vis-à-vis foreign breeds, the representative of the Department submitted -

"...गाय की प्रोडक्टिविटी वास्तव में यहाँ कम है। बाहर जो उत्पादकता है, एक तो उनकी ब्रीड अलग है, वह बात अलग है, लेकिन उनकी समस्या है। एक समस्या यह है कि वह तीन-चार साल तक प्रोडक्टिव रहती है और बाद में वह स्लाटर हाउस में चली जाती है। उनकी उत्पादकता घटती है, बीमारी बढ़ती है, समस्या हो जाती है। हम वैसा नहीं कर सकते हैं, यह एक बड़ी समस्या है। दूसरी बात यह है कि हमारी जो देसी नस्ल है, उसमें जलवायु की जो प्रतिकूलता है, उसको सहन करने की शक्ति रहती है, जो विदेश की गायों में नहीं रहती है। जिस परिस्थिति और परिवेश में उनको बढ़ाया जाता है, पाला जाता है, वह अलग है। हमारी जलवायु अलग-अलग किस्म की है। हमारी ब्रीड में सहनशीलता है, उत्पादकता कम है, लेकिन बीमारी कम लगती है। यह हमारे लिए एक एडवांटेज है, लेकिन मैं यह नहीं बोलूँगा कि उत्पादकता को और न बढ़ाया जाए।..."

2.22. on being specifically asked by the Committee about the difference in quality of milk between indigenous and foreign breeds, the representative stated -

"...सर, ऐसा है कि जैसे बाहर कहीं हॉल्स्टीन फ्रिसियन है, जर्सी है, उन्हें हम अपने देश में लाए हैं। वह नस्ल यहाँ भी 40 लीटर से ज्यादा दूध देती है, लेकिन हमारी नस्ल में ऐसा नहीं है। यह बहुत अच्छा सुझाव आपने दिया है। हमने जो अभी ब्रीडिंग की प्लानिंग की है, उसी ब्रीड के अंदर अच्छे सांड को चुनते हुए उसमें हम आर्टिफिशियल इनसेमिनेशन करेंगे, ब्रीडिंग करेंगे ताकि हमारी नस्ल बची रहे, दूध की उत्पादकता भी बढ़े और उसकी गुणवत्ता भी बची रहे।..."

2.23. Moreover, replying to another specific query by the Committee regarding problem of infertility in cows of the country, the representative stated-

"...यह जो इनफर्टिलिटी की प्रॉब्लम हो रही है, इसको दूर करने के लिए एक मुख्य बिन्दु है, जो हमने शोध करके पाया है। इसमें न्यूट्रिशन की कमी होती है। हमने एक न्यूट्रिएंट सप्लीमेंट बनाया है। अगर उसको लगातार खिलाया जाए, हमने विभिन्न राज्यों में इसका परीक्षण करके देखा है, तो उसकी इनफर्टिलिटी दूर हो सकती है।..."

2.24. The representative further added-

"...हमने उस टेक्नोलॉजी को कमर्शियलाइज करने के लिए लाइसेंस किया है। उत्तर प्रदेश में भी एक कंपनी ने लिया है, कर्नाटक में भी एक कंपनी ने लिया है और वे उत्पादन करने लगे हैं। बाकी प्रदेश अभी आए नहीं है। इन दो प्रदेशों ने अभी शुरू किया है।..."

D. AGRICULTURAL ENGINEERING

2.25. The details of status of Allocation and Utilization of funds under this Head are as follows:-

(Rs. in crore)

YEAR	BE	RE	AE
2017-18	42.68	42.68	38.81
2018-19	70.00	59.50	57.98
2019-20	64.02	64.02	38.96*
2020-21	70.00		

*Actual Expenditure up to December, 2019

2.26. The Allocation has been increased from Rs. 64.02 crore during 2019-20 to Rs. 70 crore for 2020-21 at BE stage. When the Committee desired to know about reasons for increase and proposed allocation, the Department informed the Committee as follows -

"Increase in allocations at BE during 2020-21 was due to earmarking of funds for equipment and works as planned. Rs 111.67 crore have been proposed by the Department for Agricultural Engineering during 2020-21"

2.27. Agricultural Engineering Division is working on i) identifying the mechanization gaps and future needs of improved farm equipment and machinery for different agro-climatic regions, crops and operations, reducing drudgery of agricultural workers; ii) development of technologies/machinery related to precision farming, conservation agriculture, post-harvest processing, value addition and storage of farm produces, lac, cotton, jute and allied fibre, energy generation from renewable sources, optimal water management through micro irrigation, protected cultivation; iii) prototype production, feasibility testing, training and frontline demonstration and iv) promotion of entrepreneurship and custom hiring of farm equipment and machinery, and creation of employment opportunities in the rural sector. During the year the Division developed, self-propelled high clearance multi-purpose vehicle for farm operations; tractor mounted ginger planter; cassava stake cutter planter; automatic plug type vegetable seedling trans-planter for tomato and chilli; subsurface drip lateral laying machine; pilot plant separately for anthocyanin extraction; mustard based taste enhancer, kinnow juice extraction, and for production of fruit bar; mechanized system for making the functional meat products; jute-yak blended textiles; nano-cellulose based PVA composite film for packaging application and dishware from banana fibre pulp.

2.28. As per Economic Survey (2019-20), effective use of Agricultural Machinery helps to increase productivity and production of farm output along with timely farm operations for quick rotation of crops on the same land. By raising a second crop or multi-crops from the same land, there is improvement in the cropping intensity and making agricultural land commercially more viable (NABARD, 2018). However, overall farm mechanization in India has rather been lower (40-45 per cent) compared to other countries such as USA (95 percent), Brazil (75 per cent) and China (57per cent).

2.29. When asked by the Committee about steps taken by the Department to increase Farm Mechanization in the country during the last five years, the Department in its written reply stated-

"The following steps have been taken to increase farm mechanization;

- Developed and popularised >30 farm machines suitable for millet, horticulture and conservation of agriculture practices.
- Trained 8900 farmers on the use and maintenance of farm machines
- Uploaded Mobile app on state wise package model of farm machinery on google play store
- Academia industry meet (23 numbers) were organized
- Tested ~336 new machines manufactured by different manufacturers and reports were issued for making them available to farmers of the country."

2.30. Further, regarding efforts made by the Department for adoption and acceptance of the developed Farm Implements by the farming community , the Department in its written reply submitted -

"Yes, the technologies developed have been transferred to end users. During more than 182 interaction meetings between farmers and research scientists with 5200 farmers participation, technological needs/ gaps of the farmers were identified and solutions were provided. The steps taken for better adoption of

machines are: i) Making necessary adjustments for proper functioning of machines, ii) hands on training on improved agricultural technologies, iii) farmer visit to different laboratories of institutes to get exposure on different agricultural technologies. iv) Demonstration of a) rotavator for seed bed preparation b) cono weeder for intercropping operation c) maize Sheller and other improved equipment (safety emblem for tractor trolley, d) Safety gadgets (safety goggles, hand gloves, nose mask), e) soybean processed product; v) Demonstrations of post-harvest technology and renewable energy technologies It was observed that 15-25% of the farming community have adopted the improved implements"

E. AGRICULTURAL EDUCATION

2.31. Agricultural Education Division coordinates education planning, human resource development and quality reforms of NARS of the country. It strives for maintaining and upgrading the quality and relevance of higher agricultural education through the ICAR-Agricultural University (AU) for strengthening and development of higher agricultural education through partnership with 75 Agricultural Universities (AUs) comprising of State Agricultural Universities (SAUs), ICAR Deemed-to-be-Universities (ICAR DUs), Central Agricultural Universities (CAUs) and Central Universities (CUs) with agriculture faculty by providing support for student and faculty amenities and for holistic development of students.

2.32. The year-wise Budget Estimate (BE), Revised Estimate (RE) and Actual Expenditure (AE) under Agriculture Education Division are as follows:

(Rs. in crore)			
YEAR	BE	RE	Actual Expenditure
2017-18	694.66	689.66	550.89
2018-19	859.13	760.84	645.16
2019-20	818.95	687.61	513.63*
2020-21	740.00	-	-

*Upto Dec'19

2.33. When asked to furnish reasons for decrease in allocation at BE stage during 2020-21 *vis-à-vis* allocation at BE level during 2018-19 and 2019-20 and funds proposed for the Division, the Department in its reply submitted -

"The BE allocated under scheme component of Department has been decreased from the year 2018-19 to 2020-21 which led to proportional reduction in the allocation of Education division. An amount Rs. 934.84 crore have been proposed by the Department for Agricultural Education during 2020-21"

2.34. On being asked by the Committee about the likely impact on research activities due to less allocation of funds to the Division, the Department in its reply submitted -

"Research activities Institutes were prioritized according to the available funds, and made all out efforts to achieve the set physical targets"

2.35. When asked about the in-house mechanism for planning Agricultural Research within the DARE, inadequacies in the existing mechanism and suggestions for improving and strengthening the Agricultural Research System, the reply submitted by the Department as follows-

"The research agenda of ICAR is planned based on the National priorities for food and nutritional security, sustainability of resources and profitability to the farmers. The ICAR has also prepared Vision Documents for 2030 and 2050 to provide an overarching framework for the research priorities. The in-house mechanism does include discussions and deliberation with all the stakeholders including farmers, farmer's representatives, academia, industries, public leadership, etc. Besides, the recommendations of the Parliamentary Committee, Budget Announcements, Review Committee of ICAR, Regional Committees, States and other Scientific Organizations are also taken into account while developing the research programmes. The restructuring and reforms in agricultural research system has been

implemented from time to time to bring more efficiency and transparency. Very recently, reforms and restructuring in ASRB, All India Coordinated Research Projects, Cadre Review, etc were done in DARE/ICAR"

2.36. The Committee desired to know as to whether any objective study or assessment has ever been carried out by the Department regarding the restructuring and merging of the Institutes under ICAR, the Department in its reply stated as follows-

"...A Review Committee of ICAR was constituted by the Government in 2017. The Committee in its Report made 23 Recommendations on techno- financial aspects and 9 on structural reforms along with advisories. The action on these recommendations has been under various stages of implementation by ICAR..."

2.37. In reply to a further query by the Committee regarding the number of posts of Scientists and Technical Staff vacant in ICAR and its Institutes as on date, the Department in its written reply submitted-

"...1060 Scientific posts and 2128 Technical posts are vacant in ICAR and its Institutes as on date..."

2.38. During the evidence, while responding to a query regarding reasons for vacant posts of Scientists in ICAR, the representative replied:

"...एसआरबी का रिक्रूटमेंट तीन साल बंद था, क्योंकि उसका पूरा रिवैम्पिंग किया गया और उसको रिस्ट्रक्चर कर दिया गया। कैबिनेट नोट लेकर उसमें परिवर्तन ला दिया गया। उसमें रिव्यू हुआ, उसके बाद उसमें परिवर्तन करके जो सजेशन आया, उसके ऊपर चर्चा करते हुए, उसमें परिवर्तन लाया गया। उसको कैबिनेट से अप्रूव कराया गया है। उसके बाद उनके जो चेयरमैन तथा मेम्बर्स हैं, उनका रिक्रूटमेंट किया गया।..."

2.39. When queried about efforts made by the Department for strengthening and encouragement of agricultural education at lower level, the representative submitted that-

"...आपने एग्रीकल्चर एजुकेशन, विशेषकर लोअर लेवल पर एजुकेशन की बात की है, वास्तव में यह विषय राज्य सरकार के दायरे में आता है। हम यूनिवर्सिटी को सपोर्ट करते हैं, but, basically, it is controlled by the State Governments. कहीं कॉलेज खोलना है, नहीं खोलना है, ऐसे सभी निर्णय राज्य सरकार के द्वारा लिए जाते हैं। जहाँ-जहाँ सपोर्ट के लिए डिमांड होती है, वहाँ हम सपोर्ट करते हैं। जैसे आन्ध्र प्रदेश में, तेलंगाना में हुआ। हॉर्टिकल्चर यूनिवर्सिटी हरियाणा में हो रही है, राजस्थान में भी हो रही है और एक हॉर्टिकल्चर यूनिवर्सिटी पंजाब में है। जहाँ-जहाँ सपोर्ट के लिए डिमांड होती है, वहाँ हम सपोर्ट करते हैं।..."

National Higher Education Project (NAHEP)

2.40. Indian Council of Agricultural Research (ICAR), with an aim to bring transformative reforms in the agricultural higher education of the country, launched the National Agricultural Higher Education Project (NAHEP) in November 2018. The objective of NAHEP is to enhance the relevance and quality of the agricultural education, being imparted to the students via Agricultural Universities (AU) of India. The project is a collaborative endeavour from ICAR and World Bank.

2.41. There are four key components under NAHEP, namely; Institutional Development Plan (IDP), Centres for Advanced Agricultural Sciences and Technology (CAAST), ICAR to support excellence in Agricultural Universities (AUs), and ICAR Innovation Grants (IG) to AUs. Till September 2019, out of 75 participating AUs, 44 AUs were awarded under IDP, CAAST and IG component. Under Component 2 (Investments in ICAR for Leadership in Agricultural Higher Education) is awarded to IASRI lead centre and NAARM, Hyderabad and NIAP as cooperating centres.

2.42. The details of Allocation for NAHEP during 2017-18, 2018-19, 2019-20 and 2020-21 are as follows:

(Rs. in crore)

YEAR	BE	RE	Actual Expenditure
2017-18	-	5.00	-
2018-19	207.89	207.89	173.14
2019-20	223.68	207.85	164.00*
2020-21	230.00	-	-

2.43. When the Committee asked about the reasons for only marginal increase in Allocation at BE level during 2020-21 and the funds proposed during 2019-20 and 2020-21, the Department in its reply submitted-

"The Sub-projects under NAHEP have been sanctioned in FY 2019-20 in addition to ongoing projects of FY 2018-19 also. These projects will continue in FY 2020-21, therefore to achieve the objectives, the requirement of fund has been projected as Rs.230 crore which is marginal increase at BE level during FY 2020-21. Department has proposed Rs 223.00 crore and Rs. 230.00 crore for the years 2019-20 and 2020-21, respectively"

F. AGRICULTURAL EXTENSION

2.44. Agricultural Extension Division is carrying out on-farm testing to identify the location specificity of agricultural technologies, frontline demonstration to demonstrate the production potential of different crops, training of farmers and extension personnel on knowledge and skills improvement, and creating awareness on improved technologies among farmers of the country through a network of 717 Krishi Vigyan Kendras (KVKs) spread all over the country. Under the head of Agriculture Extension, the allocation for 2020-21 at BE stage has been increased in comparison to last three fiscals. The details of status of Allocation and Utilization of funds were given to the Committee as follows:-

(Rs. in crore)

YEAR	BE	RE	Actual Expenditure
2017-18	232.51	232.51	231.99
2018-19	241.81	205.53	197.82
2019-20	222.34	221.15	112.04*
2020-21	242.50		

* Upto Dec'2019

2.45. When the Committee desired to know the reasons for less Actual Expenditure *i.e.* about 50% (upto Dec 2019) of BE during 2019-20 and latest utilization figures for 2019-20, the Department submitted-

"During 2019-20, BE was Rs. 222.34 Crore, RE was Rs. 221.15 Crore and expenditure up to Dec 2019 was Rs. 161.51 Crore and expenditure up to Jan 2020 was Rs. 179.18 Crore. Thus, expenditure was 81.02 % of the RE. Moreover, The shortfall in expenditure was 18.98 % of the RE. It has not impacted the implementation of various programmes of Agricultural Extension Division"

2.46. On being queried regarding reasons for increase in allocation during the year 2020-21 at BE stage and funds proposed by the Department for this Division during the years 2019-20 and 2020-21, the Department replied as follows-

"The more allocation is proposed in view of increasing number of KVKs, creating the required infrastructure for setting up new KVKs and strengthening of infrastructure in the old KVKs. Rs. 222.34 Crore, Rs. 242.50 Crore have been proposed by the Department for Agriculture Extension Division during 2019-20 and 2020-21, respectively."

Krishi Vigyan Kendras (KVKs)

2.47. Technology assessment is one of the main activities of KVKs to identify the location specificity of agricultural technologies developed by National Agricultural Research Systems (NARS) under various farming systems. Besides taking up technology assessment, demonstration and capacity development programmes during

the year, the other initiatives such as Farmer FIRST, Attracting and Retaining Youth in Agriculture (ARYA), Cluster Frontline Demonstration of Pulses and Oilseeds, National Innovations in Climate Resilient Agriculture (NICRA), Pulses Seed Hubs, KVK Portal, ATICs, *Mera Gaon Mera Gaurav* and awareness creation about mega government schemes etc. were also implemented to espouse the cause of farming community through technology application with their active participation.

2.48. A total of 28.30 lakh farmers and other stakeholders benefitted through various extension activities. Mera Gaon- Mera Gaurav program was implemented in 13,500 villages to provide information on newer technologies to the farmers. Attracting and Retaining Youth in Agriculture (ARYA) has been implemented in 25 districts of 25 States and 4280 rural youth were empowered for various Agri-enterprises in Agriculture, allied and service sector for sustainable income and gainful employment. More than 311.28 lakh farmers either used mKisan portal or received SMS from KVKs on improved package of practices of various crops and allied enterprises, weather based advisories and information on various Government schemes. During the year 2014-19, 171 mobile Apps were developed and 2685.18 lakh farmers were provided mobile agro-advisory.

2.49. In reply to a particular question by the Committee about the total number of KVKs in the country and the number of KVKs having adequate infrastructure viz. farm, farmers' Hostel, lab, etc, the Department submitted in its written reply as under-

"There are 717 KVKs as on date. The details of infrastructure in KVKs are as under-

Total No. Of KVKs	Office Building (No. Of KVKs)			Farmers' Hostel (No. Of KVKs)			Staff Quarter (No. Of KVKs)		
	Avail able	Under constru ction	Not Avail able	Avail able	Under constru ction	Not Avail able	Avail able	Under constru ction	Not Avail able
717	591	66	60	495	26	196	438	10	269

2.50. When the Committee wanted to know about the number of Districts in the country that have more than one KVKs and criteria for establishment of more than one KVK in a District, the Department submitted-

"Two KVKs are functioning in 81 Districts and 38 such KVKs have been established in last 5 years. The criteria for establishment of more than of one KVK in district are total geographical area, rural population and net sown area."

2.51. During the course of evidence, when the Committee desired to know the reasons for inadequate infrastructure at KVKs, the representative of the Department informed as follows -

"...591 में ऑफिस बिल्डिंग है, 66 में ऑफिस बिल्डिंग बनाई जा रही है और जो 60 हैं, इनकी अभी ऑफिस बिल्डिंग नहीं है। उनके लिए पैसा का प्रावधान हो जाएगा तो हम बना देंगे।..."

2.52. Asked about the Complaint Redressal System to address the grievances regarding the functioning and management of KVKs, the Department in its reply submitted:-

"Central Public Grievance Redressal and Monitoring System (CPGRAM)"

2.53. Further, on being asked about the grievances redressal system available to address the grievances against functioning of KVKs, the representative of the Department submitted-

"...हमारे कृषि विज्ञान केन्द्र में जितनी कम्प्लेंट आती हैं, उनको हमारे डीडीजी महोदय देखते हैं। ये नोडल ऑफिसर है। उससे संबंधित सारे प्रश्नों का यही जवाब देते हैं। इनसे किसी भी समय बात कर सकते हैं। हमसे भी बात हो सकती है।..."

2.54. Furthermore, when queried about the impact assessment or study conducted regarding the functioning of KVKs in the country, the Department in its reply submitted as follows-

"During the last five years, the performance evaluation of KVK has been done by High level Committees (HLC) constituted by Government of India and Third Parties Evaluation by National Institute of Labour Economics Research and Development (NILERD) an Autonomous Organization of NITI Aayog and International Food Policy Research Institute (IFPRI).

2.55. During the evidence, referring to Impact Study by NILRED in 2015 wherein it has been mentioned that each KVK covers 43 villages and 4300 farmers. 80% of villages covered by KVK are 10 km away from KVK, the Committee wanted to know about efforts made by the Department so as to increase the outreach of KVK in a district. The representative of the Department stated that-

"...कृषि विज्ञान केंद्र की पहुंच कैसे बढ़ाएंगे, मैंने पहले इसी विषय पर बात की थी। एक जिला बहुत बड़ा होता है, उसमें पहुंचना संभव नहीं होता है। इसको हम मोबाइल ऐप के जरिए और एक कॉमन सर्विस सेंटर है, जिनकी संख्या पूरे देश में 3.37 लाख है। यह तो 717 है।..."

G. NATIONAL AGRICULTURAL SCIENCE FUND (NASF)

2.56. The National Agricultural Science Fund with an outlay of Rs. 164.5 crore, supports basic and strategic research in agriculture. Its main objective is to build capacity for basic, strategic and cutting edge application research in agriculture and address issues which can be solved by intensive basic and strategic research jointly by team of organizations/ institutions.

2.57. The details of allocation for NASF during 2017-18, 2018-19, 2019-20 and 2020-21 is as follows:

(Rs. in Crore)

YEAR	BE	RE	Actual Expenditure
2017-18	48.80	36.55	30.77
2018-19	50.75	50.75	39.44
2019-20	54.60	50.00	26.92
2020-21	55.00		

2.58. The Allocation for 2020-21 has been only marginally increased at BE stage. When asked regarding reasons for less allocation during 2020-21 and under utilization of funds under this Division during the last three fiscals, the Department submitted-

"The Allocation for 2020-21 has been only marginally increased at BE stage keeping in view ongoing projects and estimated budget provision for new projects to be approved by the Empowered Committee and invitation of new proposals. This estimated budget can vary subject to the approval of the new projects by the Empowered Committee. The funds proposed during 2019-20 (RE) was 55.59 Crore and 2020-21 (BE) 61.3 Crore.

The funds were utilized for the funding of projects of national importance in the field of agriculture as recommended and approved by the Expert and Empowered Committee. The approved projects were fully implemented under the NASF"

2.59. The Department in its reply, regarding the number of Projects/Research funded under this Scheme since its inception and the provision under the Scheme to support for Agricultural Research in Private Sector submitted before the Committee as follows -

"...Since the inception of the NASF scheme, a total number of 197 projects has been sanctioned and funded. At present 71 projects are on-going. The NASF scheme funds the projects to the 15 private universities/NGOs as per the eligibility by NASF guidelines..."

CHAPTER-III

DOUBLING OF FARMERS' INCOME

A. Doubling of Farmers' Income

3.1. The Government of India in its Annual Budget of 2016-17, for the first time, indicated a change in policy stance from excessive emphasis on food production towards improving farmers' income, and has set a target of doubling it by the year 2022. The Government brought farmers' income into the core of its deliberations and incorporated it as the fulcrum of its strategy. The major sources of growth, operating within the traditional agriculture sector include: (i) improvement in crop productivity, (ii) improvement in livestock productivity, (iii) resource use efficiency or saving in cost of production, (iv) increase in cropping intensity, and (v) diversification towards high value crops; following sources of growth operate outside the traditional agriculture sector but contribute to farmers' income, (vi) improvement in real prices received by farmers, and (vii) shift from farm to non-farm occupations.

3.2. The Committee categorically desired to know about the efforts made by the Department to contribute in achieving the target of Doubling of Farmers income by 2022, the Department in its reply submitted as follows-

"In April 2016, the Government constituted a High Level Committee to implement a comprehensive plan to double the income of farmers. The Doubling Farmers' Income (DFI) Committee is to bring a shift in the approach so as to bring farmers' income into the nucleus of agriculture related policy deliberations and incorporates the concept of farmers' income as the fulcrum of agriculture related policy decisions. The focus is on increasing the farmers income, the stated target is to double it in seven years (from 2015-16 to 2022-23), thus marking a significant departure from past policies where the emphasis had been only on increasing production rather post-harvest management. The Committee

submitted its final report to the Government in September 2018. Most of the recommendations by the DFI Committee pertain to DAC&FW, DoF and DAH&D. The actions of DARE/ICAR in this direction are

- Setting up primary agro-processing units near major agricultural production areas to avoid post-production losses, especially in horticultural crops,
- Developed 51 multi-enterprise Integrated Farming System models (1-2 hectares) including farm and horticultural crops, agro-forestry, livestock, fisheries etc.
- Identified alternative cropping systems with high productivity potential for various agro-climatic zones including package of crop production practices from various states.
- Developed package of organic farming practices of 51 crop / cropping systems for various regions
- Special attention on development and dissemination of breeding management, food and health service technologies to improve livestock (goat, cuckoo, fisheries) productivity,.
- The proven designs of developed farm equipment and machinery have potential to save agricultural production costs by 30-40% and to increase the crop production (10-15%) through judicious use of inputs and reduction in labour requirement.
- The Krishi Vigyan Kendras (KVKs) are working on developing Model Villages as “Doubling Farmers Income Villages” KVKs located in all parts of the country are developing 2 villages into model DFI villages by operating the DFI module. In all, 651 KVKs of 30 states/UTs have adopted 1416 villages for the purpose and are working with a diversified strategy involving different categories of farmers in different agro-ecological systems.
- Promotion of income enhancing interventions for convergence with other agencies include, micro-irrigation, high value agriculture, farm mechanization, processing and value addition, linking small holders to

markets through FPOs, promotion of agri-enterprises, and integrated farming systems, etc.

- ICAR constituted State-wise Coordination Committees (SCCs) including renowned personnel from farming community, line departments, SAUs, ICAR institute, KVKs, etc. SCC prepared a comprehensive strategy document on doubling farmers' income by 2022 for the respective states. The SCC strategy Documents were shared with respective state governments for implementation. ICAR is promoting these strategies in all the regions through ICAR Research Institutes and Agricultural Universities in convergence with the concerned state agencies."

3.3. During the evidence, on being asked about the steps taken for Doubling of Farmers' Income, the representative of the Department replied as follows -

"...डबलिंग ऑफ फार्मर्स इनकम के लिए हमने राज्य सरकारों को डाय्मेंट्स, स्ट्रेटजी बनाकर दी है। मंत्री महोदय ने सारे मुख्य मंत्रियों को भी भेजा है। खाली इससे बात नहीं बनेगी, इसे हमें करना भी है। हमने हर एक जिले में दो-दो गांव गोद लिए हैं, जिनमें हम डबल करके खुद दिखाएंगे कि कैसे हो सकता है? उत्तर प्रदेश में हमने डीसीएम श्रीराम चीनी मिल के साथ मिलकर, चार चीनी मिलें हमारे साथ हैं, 8 गांव हम गोद लेकर, वहां हम दो साल से काम कर रहे हैं। वहां हम इसे बढ़ाकर 2022 तक दो गुना करने की कोशिश कर रहे हैं। हमने इस तरह की व्यवस्था बनाई है। इसके लिए हमारे जितने कार्यक्रम हैं, सारा बजट उसी दिशा में खर्च हो रहा है। भविष्य के लिए भी काम हो रहा है और इस दिशा में भी काम हो रहा है।..."

3.4. Further, on being asked regarding target set by the Department in the direction of Doubling of Farmers Income, the Department submitted-

"The DFI Committee estimated farm income, non-farm income and the farmer's income in the benchmark and terminal years. These are presented in table below in terms of both real and nominal prices.

Table: Farmers' Income in Base and Target Year (Rs.)

	Base Year:2015-16 (at 2015-16Prices)	Target Year: 2022-23 (at 2015-16 Prices)	Target Year: 2022-23 (at Current Prices)
All India	96,703	172,694	242,998

Source : DFI Committee

Regarding the increase in income of farmers during the last three years, most comprehensive information available is from NAFIS (NABARD) Data. The comparison of NSSO (2013) and NAFIS Survey indicates an increase from Rs. 77112/- in 2012-12 to Rs. 96,708/- (25.4% growth). Also NSSO is conducting the comprehensive survey, the detail will be made available in the next year."

PART II

OBSERVATIONS/RECOMMENDATIONS OF THE COMMITTEE

BUDGETARY ALLOCATION VIS-À-VIS PROPOSED ALLOCATION

1. The Committee note that the BE for the Department has shown an upward trend over the years as from Rs. 6800 crore in 2017-18, the BE has increased to Rs. 8362.58 crore in 2020-21. However, the funds were curtailed at RE Stage in the year 2019-20 when the BE of Rs. 8078.78 crore was reduced to Rs. 7846.17 crore. As informed by the Department, the reduction in Allocation had serious impact on implementation of Schemes. It has led to downsizing of some of the Programmes and some activities had to be postponed for later years and the Department had to set priorities as per the available funds. The Committee note that the Allocation of funds for the year 2020-21 at BE Stage has been increased to the tune of Rs. 283.82 crore i.e from Rs. 8078 crore during 2019-20 to Rs.8362.58 crore during 2020-21. The Committee were further informed by the Department that an amount of Rs.10650.17 crore was proposed by the Department for the year 2020-21. However, the Ministry of Finance has allocated only Rs. 8362.58 crore for the year. The Committee are worried to note such state of affairs and more so, when the Department submitted before them that out of total Allocation to the Department 75 percent is spent on salaries and only 25 percent is utilized for Research Activities. The Department further informed the Committee that ideally the Allocation for Agriculture Research and Education should be 1 percent of Agricultural GDP but it has put up Demand of only Rs. 500 crore so that new Research Programmes and Schemes be started to meet the challenges of Agriculture Sector in future. The Committee in their earlier Reports also, have

been recommending to increase the allocation to the Department so that the Schemes do not suffer for want of funds. However, surprisingly, the Ministry of Finance instead of allocating more funds, has reduced the allocation at RE stage. The Committee are of the considered view that there are many new challenges coming up in the Agriculture and Allied Sectors in the Country. To address the challenges on long term basis, the provision of adequate funds for research is highly imperative. The Committee, therefore, strongly recommend that allocation at RE Stage for the Department be adequately increased during 2020-21 for which the Department should assiduously pursue the matter with the Ministry of Finance. The Committee would like to be kept apprised of the matter.

SURRENDER OF FUNDS

2. The Committee are constrained to note that the Department has surrendered unspent balances to the tune of Rs. 399.27 crore and Rs. 321.33 crore for the Fiscal Years 2017-18 and 2018-19 respectively to the Government. The reasons cited by the Department for surrender of funds are delay in approval of EFC/SFC documents, delay in release of funds, sudden earmarking of funds in SC Component, etc. The Committee note that while on the one hand the Department requests to enhance its Budgetary Allocations but on the other hand surrenders huge amount of unspent balance. This reflects poorly on the performance, financial planning process and monitoring mechanism of the Department. The Committee, while taking a very serious view in the matter strongly recommend the Department to devise an appropriate strategy by analyzing and addressing the various reasons for surrender of funds so as to ensure that the funds once allocated are fully utilized by its Divisions.

DEVELOPMENT OF NEW CROP VARIETIES

3. The Committee appreciate that during the last five years (2014-2020) more than targeted varieties of field crops have been released. A total of 1234 High Yielding Climate Resilient Crop Varieties/ Hybrids of field crops have been released and notified during the period for cultivation in different agro-ecologies of the country. During the last three years, total 52 varieties of bio-fortified varieties have been developed out of which 44 varieties have been released since 2017 and around 30 varieties have been commercialized by providing the Breeder Seeds of these varieties to the various Central and State Government Seed Producing Agencies. The Department also informed the Committee that High Yield Varieties and Hybrids, after their release, find place in the seed-chain based upon the indents of different seed multiplying agencies. Performance monitoring is done for adoptability and popularity of variety by its breeder seed demand through the DAC&FW Indents. Further, the Committee are aware of the fact that it takes almost three years for a Breeder Seed to become a Certified Seed. To ensure timely availability of seeds to farmers, the Committee desire the Department to initiate extensive awareness campaigns and a country-wide programme for training of farmers in quality Seed production so that the farmers can produce and process the seeds themselves.

LAND RESOURCE INVENTORY

4. A National Flagship Programme for Land Resource Inventory (LRI) at 1:10000-Scale was initiated by the Department in 2014. About 300 Blocks in the country have been surveyed on 1:10000 scale. Use of LRI in developing soil and water conservation plans, suggesting land use plan, and in understanding soil forming processes was demonstrated. The Department informed the Committee that Land Resource Inventory (LRI) on 1:10,000 scale for 27 Aspirational Districts of India was prepared to work out Block level land use planning. ICAR-National Bureau of Soil Survey & Land Use Planning (NBSS&LUP), Nagpur is involved in developing standard protocols for Districts/ Blocks Level Land Resource Inventory GRD at 1:10,000 Scale using Geo-spatial techniques for Agricultural Land Use Planning since September 2014. So far, 292 Blocks have been covered which include 68 Blocks in Aspirational districts. During the course of examination, the Department candidly admitted that the methodology adopted by the Department for Land Resource Inventory takes a lot of time and that the Department is trying to devise new methodology so that the Land Resource Inventory for the whole country could be completed in next five years. The Committee are of the view that preparation of Land resource Inventory of entire country will be a great tool in the hand of planners for optimizing agricultural output and ensuring food security for the future generations of the country. The Committee, therefore, desire that the Department should coordinate with the State Governments for speedy processing of Land Resource Inventory Work on top priority basis for making sure its completion in a time bound manner. The

Committee, further recommend that to accomplish this huge task the Department should be made available sufficient funds by the Government.

INDIGENOUS BREEDS OF LIVESTOCK

5. The Committee note that Indigenous Cattle Breed Improvement Programme of the Department covers Gir, Kankrej and Sahiwal breeds. Nine each of Gir and Kankrej, and eight Sahiwal bulls of fourth set were inducted for progeny testing. The Department has informed that the Government of India on the request of the Department issued a Gazette Notification on 14 October 2019 recognizing 184 Registered Indigenous Breeds of Livestock and Poultry. The Gazette Notification provides legal support to Intellectual Property Rights (IPRs) to the registered breeds and for developing mechanism for sharing benefits among the animal keepers. The Committee observe that though the yield of milk from the foreign breeds of cows like Holstein Friesian is more as compared to indigenous breeds but at the same time the indigenous breeds of cattle are more resilient, possess high levels of immunity and their upkeep is easier as compared to imported breeds. The Committee, therefore, recommend the Department to develop breeds through IVF which can have qualities of both these breeds so as to increase the milk production in the Country without compromising on the quality. The Committee also expressed their concern over the problem of infertility in cattle of the country. The Department apprised the Committee that the infertility problem particularly among cows is mainly due to improper nourishment and they have developed a nutrient supplement for the nutrition of cattle which will help in dealing with this problem. At present only 2 companies one each from Uttar Pradesh and Karnataka have started production of the supplement.. The Committee recommend that the Nutrition Supplement should be given wider

publicity through electronic media, newspapers, awareness programmes, etc so as to make sure that maximum number of farmers can take benefit of it.

AGRICULTURAL EDUCATION

6. Agricultural Education Division coordinates education planning, human resource development and quality reforms of National Agricultural Research System (NARS) of the country. It strives for maintaining and upgrading the quality and relevance of higher agricultural education. The Committee observe that the Allocations for the Division are being reduced year by year since 2018-19. During the fiscal year 2018-19, the funds allocated at BE Stage was Rs. 859.13 crore which was further reduced to Rs.760.84 crore at RE Stage and the BE for 2019-20 was Rs. 818.95 crore which was reduced to Rs.687.61 crore at RE Stage. The Allocation at BE level for 2020-21 is Rs.740 crore as against proposed Allocation of Rs. 934.84 crore. The Department informed the Committee that the BE allocated under Scheme Component of Department has been decreased from the year 2018-19 to 2020-21; which has led to proportional reduction in the allocation of Education division. Research activities Institutes were prioritized according to the available funds, and made all out efforts to achieve the set Physical Targets.

The Committee note that the Division is engaged in development of Human resource for strengthening of agricultural research and the reduction in allocation year after year to the Division would be detrimental for overall Agricultural Research in the country. The Committee are of the considered view that the Government needs to focus on Agricultural Research and for this adequate funds be provided. The Committee, therefore, recommend the Department to seriously pursue their case with the Ministry of Finance in order to make sure that the funds are not further reduced at RE Stage and adequate funds are provided to the Division from the next Financial Year.

Further, regarding the restructuring and merging of the Institutes under ICAR, the Department informed that a Review Committee of ICAR was constituted by the Government in 2017. The Committee in its Report made 23 Recommendations on techno-financial aspects and 9 on structural reforms along with advisories. The Department has not shared the details of the said Report with the Committee. The Committee desire the Department to make a copy of the Report of the Review Committee of ICAR available for the use of Committee along with the status of implementation of the Recommendations made therein.

VACANT POSTS IN ICAR

7. The Committee are distressed to note that 1060 posts of Scientists and 2128 Technical posts are vacant in ICAR and its Institutes as on date. And, such large number of vacant positions of such prominent and crucial levels would have certainly affected the research activities in ICAR adversely. The Department, during the course of examination informed that reforms and restructuring in Agricultural Scientists and Recruitment Board (ASRB) was going on and therefore no recruitment has been done for last three years. Now, the process has been completed and Chairman and Members of the Board have been appointed. The Committee have taken a serious view of the matter and are dismayed to note as to how a premier Research Institute of the Country like ICAR has worked for the last three years with more than 1000 vacant posts of Scientists. The Committee deprecate the lackadaisical attitude of the Department towards recruitment of Scientists and desire that the recruitment to the vacant posts be filled at the earliest for the smooth functioning of the Institute. The Committee would like to be apprised of the action taken in the matter.

AGRICULTURAL EXTENSION

8. The Committee note that the Agricultural Extension system is characterized by its pluralistic nature wherein Public, Private, Non-Governmental Organizations (NGOs), Farmer Based Organization (FBOs), etc. are involved in the dissemination of advisory services, input provision and other services to the farmers. Agricultural Extension Division is carrying out on-farm testing to identify the location specificity of agricultural technologies, Frontline Demonstration to demonstrate the production potential of different crops, training of farmers and extension personnel on knowledge and skills improvement, and creating awareness on improved technologies among farmers of the country through a network of 717 Krishi Vigyan Kendras (KVKs) spread all over the country. The Committee also note that the allocation for the Division has only been marginally increased from Rs. 221. 15 crore at RE stage during 2019-20 to Rs. 242.50 core at BE stage during 2020-21.

The Committee are distressed to note that out of total 717 KVKs in the country, only 591 have office building, 495 have Farmers' Hostel and 438 have Staff Quarter. More than 100 KVKs in the country do not have adequate infrastructure and requisite facilities. During the course of examination, the Department deposed before the Committee that the present status of infrastructure in KVKs is due to lack of funds. The Committee, however, strongly disagree with this contention of the Department as the Department failed to utilise even the funds allocated to it continuously for the last two years. To be more specific, during the year 2018-19, the Actual Expenditure was Rs. 197.82 crore vis-à-vis RE of Rs. 205.53 crore, again in the year 2019-20, the expenditure was Rs. 179.18 or (till jan)

vis-à-vis Rs. of Rs. 221.15 crore. The Department should seek funds as per realistic assessment. The Committee, therefore, recommend the Department to properly plan and utilise funds for infrastructure at KVKs and ensure that all the KVKs are functional at the earliest. The Committee also recommend that there should be an effective mechanism in place for redressal of grievances of the problems being faced by the farmers' in the functioning of KVKs.

FUNCTIONING OF KVKs

9. The Committee note that Krishi Vigyan Kendras are an important mechanism for dissemination of knowledge and information to the farmers and are a pivotal agricultural extension component. Existence of a robust system of KVKs is very important for transfer of knowledge from lab to land. The Department informed that there are 717 KVKs in the country as on date. 81 districts in the country have two KVKs and 38 such KVKs have been established in the last five years. The Committee were also informed that each KVK covers 43 villages and 4300 farmers. During evidence, the representative of the Department informed that 80% of villages covered by KVK are 10 km away from it. The Department further informed that since it is not possible for one KVK to cover the whole district, Mobile apps (in English and Hindi) have been developed to disseminate knowledge and Common Service Centre have been set up to increase the outreach by the KVKs. While appreciating the development of Mobile Apps to disseminate knowledge on various aspects, the Committee are of the view that these are not an alternative to KVKs and hence recommend that Sub-Centres of KVKs be opened in each Block of a District to maximise their outreach. Also, to make the Mobile Apps more user-friendly, these may also be made available in all regional languages along with Hindi and English.

PRIVATE INVESTMENT IN AGRICULTURE

10. The Committee are aware of the fact that Private investment in Agriculture Sector is the need of the hour. The Department informed the Committee that most of the private investment is for in-house research of plant breeding, pesticides, food processing, animal health and farm machinery. These Private R&D Organizations are mostly active since popularization of tractors, fertilizers, pesticides and seeds. Keeping in view the increase in the Private Sector Investment in Agriculture Sector, the Committee desire that this investment be also encouraged in Agricultural Research and Education in all its vital areas as well as with a clearly chalked out strategy and action plan. The Committee would however, also like to caution the Government to safeguard the interests of vulnerable farmers while allowing increased private investment in this Sector.

DOUBLING OF FARMERS' INCOME

11. The Committee note that the Government has set the target of Doubling of Farmers' Income by the year 2022. The Committee are aware of the fact that to double the farmers' income within a timeframe *i.e* by 2022 is a mammoth task. But the Committee is pleased to note that the Government is earnestly moving in this direction. The Department has informed that the Government in the year 2016 constituted a High Level Committee to implement a comprehensive plan to double the income of farmers. Most of the recommendations by the DFI Committee pertain to DAC&FW, DoF and DAH&D. However, during the course of examination the Department informed that the Krishi Vigyan Kendras (KVKs) are working on developing Model Villages as “Doubling Farmers Income Villages”. KVKs located in all parts of the country are developing 2 villages into model DFI villages by operating the DFI module. Further, 651 KVKs of 30 states/UTs have adopted 1416 villages for the purpose and are working with a diversified strategy involving different categories of farmers in different agro-ecological systems. The Committee feel that the adoption of villages by KVKs is a welcome step but the number of villages adopted by KVKs will not suffice. Considering the vast expanse of the country, the Committee are of the firm view that a KVK adopt appropriate number of villages in a district so as to contribute towards achieving the goal of Doubling of farmers' income by 2022. The Committee desire that sufficient funds should be allocated for this purpose and the Department should optimally utilise the allocated funds for making a solid contribution in achieving the desire target of 'Doubling the Farmers' Income by the year 2022.'

NEW DELHI;
02 March, 2020
12 Phalgun, 1941 (Saka)

P.C. Gaddigoudar
Chairperson,
Standing Committee on Agriculture

Annexure-I

Breeder seed production of Bio-fortified varieties

Sr. No.	Crop	Name of variety	Breeder Seed Produced (quintal)			
			2016-17	2017-18	2018-19	Total
1.	Rice	DRR Dhan 45	42.0	1.8	0.0	43.8
2.		CR Dhan 310	23.0	-	5.30	28.30
3.		CR Dhan 311	-	1.0	1.0	2.00
4.	Wheat	WB 02	153.0	605.3	130.00	888.3
5.		HPBW 01	-	100.0	200.00	300.00
6.		HI 8759	80.0	386.0	310.00	776.00
7.		HI 1605	52.0	80.5	400.00	532.50
8.		HD 3171	15.0	-	40.00	55.00
6.		DBW 173	-	-	425.00	425.00
7.		DBW-187	-	-	360.00	368.00
8.		UAS 375	-	-	5.0	5.00
9.	Pearl millet	HHB 299	-	-	0.40	0.40
10.		AHB 1200	-	-	0.50	0.50
11.	Lentil	Pusa AgetiMasoor	-	27.5	15	32.50
12.		IPL-220	-	-	6.0	6.00
13.	Mustard	Pusa Mustard 30	4.0	5.1	6.50	15.60
14.		Pusa Double Zero Mustard 31	1.0	0.9	3.0	4.90
	Total		370.0	1208.1	1907.7	3483.8

**STANDING COMMITTEE ON AGRICULTURE
(2019-20)**

MINUTES OF THE EIGHTEENTH SITTING OF THE COMMITTEE

The Committee sat on Wednesday, the 19 February, 2020 from 1030 hours to 1310 hours in Committee Room '3', First Floor, Block - A, Extn. to Parliament House Annexe Building, New Delhi.

PRESENT

Shri Parvatagouda Chandanagouda Gaddigoudar – Chairperson

MEMBERS

LOK SABHA

2. Shri Afzal Ansari
3. Shri Devendra Singh "Bhole"
4. Shri A. Ganeshmurthi
5. Shri Devji Mansingam Patel
6. Smt. Shardaben Anilbhai Patel
7. Shri Bheemrao Baswanthrao Patil
8. Shri Pocha Brahmananda Reddy
9. Shri Virendra Singh

RAJYA SABHA

10. Shri Partap Singh Bajwa
11. Shri Ram Nath Thakur
12. Shri Vaiko
13. Smt. Chhaya Verma
14. Shri Harnath Singh Yadav

SECRETARIAT

1.	Shri Shiv Kumar	-	Joint Secretary
2.	Smt. B. Visala	-	Director
3.	Smt Juby Amar	-	Additional Director
4.	Shri Sumesh Kumar	-	Deputy Secretary

LIST OF WITNESSES

MINISTRY OF AGRICULTURE AND FARMERS WELFARE **(DEPARTMENT OF AGRICULTURAL RESEARCH AND EDUCATION)**

S.No.	NAME OF THE OFFICER	DESIGNATION
1.	Dr. Trilochan Mohapatra	Secretary (DARE) & DG (ICAR)
2.	Shri Bimbadhar Pradhan	Spl.Secy & FA (DARE/ICAR)
3.	Shri Sanjay Kumar Singh	Addl. Secy. (DARE) & Secy. (ICAR)
4.	Dr. Ashok Kumar Singh	Dy. Director General (Extension), ICAR
5.	Dr. A.K.Singh	Deputy Director General (Hort. Science), ICAR
6.	Dr. Joykrushna Jena	Deputy Director General (Fisheries Science), ICAR
7.	Dr. S.K. Chaudhari	Deputy Director General (NRM), ICAR
8.	Dr. T.R. Sharma	Deputy Director General (Crop Science), ICAR
9.	Dr. Bhupendra Nath Tripathi	Deputy Director General (Animal Science), ICAR
10.	Dr. R.C.Agarwal	Deputy Director General (Education) - Acting

2. At the outset, the Chairperson welcomed the Members and the Representatives of the Ministry of Agriculture and Farmers Welfare (Department of Agricultural Research and Education) to the Sitting of the Committee convened for examination of DFG (2020-21) of the Department and apprised them of the confidentiality of the proceedings.

3. After the introduction, a PowerPoint presentation was made by the Representatives of the Department. Thereafter, the Committee raised several issues/points as briefly mentioned below and sought clarifications/information thereon from the Department:

- i). Scrupulous Budgetary Planning be done so that funds are not surrendered;

- ii). Need to make provisions in Budget for Doubling of Farmer's Income;
- iii). Need for imparting training to farmers for production and processing of quality seeds;
- iv). Need to ensure availability of fodder and cultivation of forage crops be encouraged alongwith the need for efforts to be made develop green fodder alongwith dry fodder;
- v). Need to increase the allocation of funds for agricultural research and education;
- vi). Emphasis be given on increase in production of milk in indigenous cows while maintaining the quality of milk;
- vii). Efforts need to be made to address the problem of infertility in cattle;
- viii). Database of all the farmers be prepared for imparting training;
- ix). Efforts be made to increase coverage of KVKs in a District and Open Sub-Centre of KVK in each Block of a District
- x). Efforts be made to provide basic infrastructure in KVKs and fill up the vacant posts of scientists;
- xi). Research be done to mitigate the impact of Global Warming on Agriculture;
- xii). Need to develop breeds of cattle with qualities of both indigenous and imported breeds;
- xiii). Need to develop the Mobile Apps by DARE available in all regional languages; and
- xiv). Steps need to be taken to provide Agricultural Education at School level;

4. The representatives of the Ministry responded to most of the queries raised by the Members. The Chairperson, then, thanked the witnesses for sharing valuable information with the Committee on the Subject and directed them to send, in writing, the requisite information on points/items, which was not readily available with them, to the Committee Secretariat by 24 February, 2020.

The Committee then adjourned.

(A copy of the verbatim proceedings of the Sitting has been kept separately.)

STANDING COMMITTEE ON AGRICULTURE

(2019-20)

MINUTES OF THE TWENTY FIRST SITTING OF THE COMMITTEE

The Committee sat on Monday, the 02th March, 2020 from 1500 hrs. to 1540 hrs. in the Committee Room '3', First Floor, Block-A, Extn. to Parliament House Annexe Building, New Delhi.

PRESENT

Shri Parvatagouda Chandanagouda Gaddigoudar– Chairperson

MEMBERS

LOK SABHA

2. Shri Kanakmal Katara
3. Shri Bhagwanth Khuba
4. Shri Mohan Mandavi
5. Smt. Shardaben Anilbhai Patel
6. Shri Bheemrao Baswanthrao Patil
7. Smt. Navneet Ravi Rana
8. Shri Pocha Brahmananda Reddy
9. Shri Mohammad Sadique
10. Shri Virendra Singh

RAJYA SABHA

11. Shri Partap Singh Bajwa
12. Shri Narayan Rane
13. Shri Ram Nath Thakur
14. Shri Vaiko
15. Smt. Chhaya Verma
16. Shri Harnath Singh Yadav

SECRETARIAT

- | | | | |
|----|-----------------|---|---------------------|
| 1. | Shri Shiv Kumar | – | Joint Secretary |
| 2. | Smt. B. Visala | – | Director |
| 3. | Smt. Juby Amar | – | Additional Director |

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

* (i) XXXX XXXX XXXX XXXX XXXX

(ii) Draft Report on 'Demands for Grants (2020-21)' of the Ministry of Agriculture and Farmers Welfare (Department of Agricultural Research and Education).

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.

The Committee then adjourned.

*Matter not related to this Report