



**STANDING COMMITTEE ON AGRICULTURE
(2017-2018)**

SIXTEENTH LOK SABHA

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

'DEMANDS FOR GRANTS (2018-19)'

**{Action Taken by the Government on the Observations/
Recommendations contained in the Forty Eighth Report (Sixteenth Lok Sabha)
of the Standing Committee on Agriculture (2017-2018)}**

FIFTY NINTH REPORT



**LOK SABHA SECRETARIAT
NEW DELHI**

August 2018/Shravana,1940 (Saka)

FIFTY NINTH REPORT

**STANDING COMMITTEE ON AGRICULTURE
(2017-2018)**

(SIXTEENTH LOK SABHA)

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

'DEMANDS FOR GRANTS (2018-19)'

**{Action Taken by the Government on the Observations/
Recommendations contained in the Forty Eighth Report (Sixteenth Lok Sabha)
of the Standing Committee on Agriculture (2017-2018)}**

Presented to Lok Sabha on

03.08.2018

Laid on the Table of Rajya Sabha on

03.08.2018



LOK SABHA SECRETARIAT

NEW DELHI

August 2018/Shravana, 1940 (Saka)

COA No. 381

Price: Rs.

© 2018 By Lok Sabha Secretariat

Published under Rule 382 of the Rules of Procedure and Conduct of Business in Lok Sabha (Fourteenth Edition) and Printed by

<CONTENTS>

	PAGE
COMPOSITION OF THE COMMITTEE.....	(iii)
INTRODUCTION.....	(v)
CHAPTER I Report	
CHAPTER II Observations/Recommendations which have been accepted by the Government	
CHAPTER III Observations/Recommendations which the Committee do not desire to pursue in view of the Government's replies	
CHAPTER IV Observations/Recommendations in respect of which replies of the Government have not been accepted by the Committee	
CHAPTER V Observations/Recommendations in respect of which final replies of the Government are still awaited	

APPENDIX

- i): **Extracts of the Minutes of the 27th Sitting of the Committee held on 31.07.2018**
- ii). Analysis of Action Taken by the Government on the Recommendations contained in the Forty Eighth Report (Sixteenth Lok Sabha) of the Standing Committee on Agriculture (2017-2018).

COMPOSITION OF THE STANDING COMMITTEE ON AGRICULTURE (2017-18)

Shri Hukmdev Narayan Yadav - Chairperson

MEMBERS

LOK SABHA

2. Shri Sanjay Dhotre
3. Prof. Ravindra Vishwanath Gaikwad
4. Shri Sanganna Amarappa Karadi
5. Shri Nalin Kumar Kateel
6. Smt. Raksha Tai Khadase
7. Md. Badaruddoza Khan
8. Shri C. Mahendran
9. Dr. Tapas Mandal
10. Shri Janardan Mishra
- @11. Shri Praveen Kumar Nishad
12. Shri Devji M. Patel
13. Shri Nityanand Rai
14. Shri Mukesh Rajput
15. Shri Konakalla Narayana Rao
16. Shri C.L. Ruala
17. Shri Arjun Charan Sethi
18. Shri Virendra Singh
19. Shri Dharmendra Yadav
20. Shri Jai Prakash Narayan Yadav
- #21. VACANT

RAJYA SABHA

22. Sardar Sukhdev Singh Dhindsa
- *23. Shri Rajmani Patel
- *24. Shri Narayan Rane
- *25. Shri Kailash Soni
26. Shri Mohd. Ali Khan
27. Shri K.K. Ragesh
28. Shri Ram Nath Thakur
29. Shri R. Vaithilingam
- *30. Shri Harnath Singh Yadav
31. Dr. Chandrapal Singh Yadav

@ Shri Praveen Kumar Nishad, MP Lok Sabha nominated *vice* Shri Nephio Rio, MP Lok Sabha w.e.f. 27.04.2018 vide Bulletin Part II No. 6866 dated 27.04.2018

Vacant due to resignation of Shri B.S. Yeddyurappa from the Membership of Lok Sabha w.e.f. 18.05.2018 vide Bulletin Part-II Table Office (B) No. 6885 dated 19.05.2018

**vice* Shri Janardan Dwivedi, Shri Meghraj Jain, Shri Vinay Katiyar and Shri Shankarbhai N. Vegad, who ceased to be the Member of the Committee on their retirement from Rajya Sabha on 27.01.2018, 02.04.2018, 02.04.2018 and 02.04.2018 respectively.

SECRETARIAT

1. Shri D.S. Malha - Joint Secretary
2. Shri Arun K. Kaushik - Director
3. Shri Nirantar Kumar Singh - Sr. Committee Assistant

INTRODUCTION

I, the Chairperson, Standing Committee on Agriculture (2017-18), having been authorized by the Committee to submit the Report on their behalf, present this Fifty Ninth Report on action taken by the Government on the Observations/Recommendations contained in the Forty Eighth Report (Sixteenth Lok Sabha) of the Standing Committee on Agriculture (2017-18) on 'Demands for Grants (2018-19)' pertaining to the Ministry of Agriculture and Farmers Welfare (Department of Agricultural Research and Education).

2. The Forty Eighth Report (Sixteenth Lok Sabha) of the Standing Committee on Agriculture (2017-18) on 'Demands for Grants (2018-19)' pertaining to Ministry of Agriculture and Farmers Welfare (Department of Agricultural Research and Education) was presented to Lok Sabha and laid on the Table of Rajya Sabha on 06.03.2018. The Action Taken Notes on the Report were received on 29.05.2018.

3. The Report was considered and adopted by the Committee at their Sitting held on 31.07.2018.

4. An analysis of the action taken by the Government on the Observations/Recommendations contained in the Forty Eighth Report (Sixteenth Lok Sabha) of the Committee is given in **Appendix**.

NEW DELHI;
02 August, 2018
11 Shravana, 1940(Saka)

HUKMDEV NARAYAN YADAV
Chairperson,
Standing Committee on Agriculture

CHAPTER-I

REPORT

This Report of the Standing Committee on Agriculture deals with the action taken by the Government on the Observations/Recommendations contained in the Forty-Eighth Report (Sixteenth Lok Sabha) of the Standing Committee on Agriculture (2017-2018) on "Demands for Grants (2018-19)" pertaining to Ministry of Agriculture and Farmers Welfare (Department of Agricultural Research and Education) which was presented to Lok Sabha and laid on the Table of Rajya Sabha on 06.03.2018

1.2 The Ministry of Agriculture and Farmers Welfare (Department of Agricultural Research and Education) have furnished Action Taken Replies in respect of all the 13 Observations/Recommendations contained in the Report. These replies have been categorized as under:

- (i) Observations/Recommendations that have been accepted by the Government:

Recommendation Nos.	1,2,3,4,5,6,7,8,9,11 and 12	Chapter- II
		Total- 11

- (ii) Observations/Recommendations in respect of which the Committee do not desire to pursue in view of the Government's reply:

Recommendation Nos.	13	Chapter- III
		Total- 01

- (iii) Observations/Recommendations in respect of which action taken replies of the Government have not been accepted by the Committee:

Recommendation No.	10	Chapter- IV
		Total- 01

- (iv) Observations/Recommendations in respect of which final replies of the Government are still awaited:

Recommendation No.	9	Chapter- V
		Total- 01

1.3 The Committee trust that utmost importance would be given to implementation of the Observations/Recommendations accepted by the Government. In cases, where it is not possible for the Department to implement the Recommendations in letter and spirit for any reason, the matter should be reported to the Committee with the reasons for non-implementation. The Committee desire that further Action Taken Notes on the Observations/Recommendations contained in Chapter-I and final replies in respect of recommendation contained in Chapter - V of this Report be furnished to them at an early date.

1.4 The Committee will now deal with the action taken by the Government on some of the Recommendations in the succeeding paragraphs.

**A. ALLOCATION AND UTILISATION OF FUNDS
RECOMMENDATION (PARA NO. 1)**

1.5 The Committee had observed/ recommended as under :-

The Committee note that the budgetary allocation for the Department of Agricultural Research and Education for fiscal year 2018-19 has been substantially enhanced from Rs. 6800 crores during 2017-18(BE) to Rs. 7800 crores. The total Demand for 2018-19 under Scheme and Non-Scheme Heads together is Rs. 7800.00 crore as against proposal of Rs 8380.92 crore. Out of total allocation for 2018-19, Rs. 2914.77 crore is under the Scheme Head and Rs. 4885.23 crore under the Non-Scheme Head. The Committee note that the allocation at RE stage for Non-Scheme head during 2017-18 was increased from Rs. 4633.54 crore to Rs 4825.54 crore during 2017-18 whereas there was no change for Scheme head which remained as Rs.2166.46 crore. The Committee have been informed that the actual expenditure under Scheme Head is Rs. 1078.81 crore up to 31.12.17. The Committee observe that despite no change in allocation of funds at RE stage during 2017-18 for Scheme Head, the actual expenditure of the Department was only around 50% up to December 2017. The Committee have been informed the reasons for less expenditure are that the termination of XIIth

plan during 2016-17 and subsequent formulation, processing and approvals of SFC/ EFCs for next phase i.e. 2017-18 to 2019-20 took substantial time. The process of approvals of SFC/EFC for the next phase completed by September-October, 2017, which is the main reason for low expenditure during first three quarters of current financial year. Recognizing the importance of agricultural research, education and extension for agriculture growth and development in the country, the Committee in its earlier reports have been emphasizing on the need for increase in allocation to DARE. The Committee are happy to note that the allocation has been substantially enhanced for 2018-19. However, the Committee feel that mere enhancement is not suffice, rather optimal utilization of funds is more important because non-utilization of funds defeats the very purpose of enhancement. The reasons cited by the Ministry for underutilization of funds during the year 2017-18 are administrative and procedural which could have been easily avoided with proper planning and foresight. The Committee, therefore, recommend that the Department should realistically assess its requirement of funds and seek funds only on the basis of this assessment and closely monitor expenditure so that situation of large amount of funds remaining unutilized at the end of the financial year can be avoided.

1.6 In its reply, the Ministry has stated as under:-

"Recommendation of the committee has been noted for necessary compliance. Accordingly, Department is monitoring the utilisation of allocated funds regularly at monthly intervals during Senior Officers meeting. The Department will make full efforts so that the allocated funds are utilized as per respective SFC/EFC approvals.

1.7 While examining the Demands For Grants (2017-18), the Committee had noted with concern that the pace of implementation of Schemes are not satisfactory due to tardy utilization of funds by DARE. The Committee also noted that mere enhancement is not suffice, rather optimal utilization of funds is more important because non-utilization of funds defeats the very purpose of enhancement. Therefore the Committee had recommended the Department to realistically assess its requirement of funds and seek funds only on the basis of this assessment and closely monitor expenditure so that situation of large

amount of funds remaining unutilized at the end of the financial year can be avoided. The Department in its Action Taken Reply has stated that recommendation of the Committee has been noted for necessary compliance and the Department is monitoring the utilization of allocated funds regularly at monthly intervals during Senior Officers meeting. The Department has assured the Committee that they will make full efforts to utilize the allocated funds as per respective SFC/EFC approvals. The Committee desired to be informed of the efforts of the Department in this regard at regular intervals.

B. PROPORTION OF BUDGETARY ALLOCATION VIS-A-VIS CENTRAL OUTLAY
RECOMMENDATION (PARA NO. 2)

1.8 The Committee had observed/ recommended as under :-

The Committee note that the proportion of budgetary allocation of the Department was 0.30% of total Central Plan Outlay in 15-16, 0.31% in 2016-17 and 0.32% in 2017-18. The Department has informed that the budgetary allocation for the year 2018-19 is Rs. 7800.00 crore which is also 0.32% of total Central Plan Outlay as against the proposed amount of Rs 8380.92 crores for the fiscal year 2018-19. The Committee have also been informed that the proportion of budgetary allocations made in favour of Department out of total budget of the Government during the last three fiscal years are much less as compared to the Ministries/Departments like Higher Education, Food & Public Distribution and Fertilizers. The Committee note that for the last three fiscal year the proportion of budgetary allocation of the department is more or less same. While noting the increase in allocation for 2018-19, the Committee are of the opinion that this increase is just incremental and falls way short of what the agriculture research, education and extension actually needs. The Committee urge the Department to impress upon the Ministry of Finance to allocate funds to them as per their requirement at RE stage so that agricultural research, education and extension do not suffer for want of funds.

1.9 In its reply, the Ministry has stated as under:-

Recommendation of the committee has been noted for necessary compliance.

1.10 During the course of examination of Demands For Grants (2017-18) the Committee noted that for the last three fiscal years the proportion of budgetary allocation of the department is more or less same and therefore, the Committee had recommended the Department to impress upon the Ministry of Finance to allocate funds to them as per their requirement at RE stage so that agricultural research, education and extension do not suffer for want of funds. The Committee are not satisfied with the casual reply of the Department that the recommendation of the Committee has been noted for compliance. The Committee desire the Department to spell out the steps taken in this regard.

**C. HORTICULTRE SCIENCE
RECOMMENDATION (PARA NO. 4)**

1.11 The Committee had observed/ recommended as under :-

The Committee note that the thrust areas of Horticulture Science Division are enrichment of genetic resources, development of new cultivars with resistance mechanism to biotic and abiotic stresses, appropriate production technology and health management system. The perceived threats on climate change pose greater challenge in achieving the targets in the horticultural crops now than ever before. Some of the issues like collection, conservation and characterization of germ plasm for breeding improved varieties, production technology with special reference to abiotic stresses and protected cultivation, seed and planting material, plant health management and food safety, post-harvest handling, processing and value addition, labour needs and mechanization are being addressed in a welldefined timeframe. The Committee note that Rs. 200 crore has been allocated for 2018-19 at BE stage to the Horticulture Division. However, this Division was able to utilize only Rs.91.14 crore (to 31.12.17) out of the allocated funds of Rs.154.90 crore during the year 2017-18. Stating the reasons for under utilisation, the Department has submitted that the EFCs of all the five Schemes were approved during September-October to December, 2017. As a result, expenditure involving policy decisions were deferred for the time being, and hence there was reduced expenditure. However, research

activities were carried out within the available funds and there was no adverse impact on major research programmes. The Department has observed that henceforth, the budget utilization will be hastened by taking up pending works and creation of assets and strengthening of research facilities. The underutilization of funds is not acceptable to the Committee. They desire the Department to take all required steps for optimal utilization of funds, especially when the allocation for the year 2018-19 has been substantially increased.

The Committee note that horticulture sector has great scope for expansion and has vast potential for enhancing production, productivity and value added products. The Committee have been informed that during XII Five Year Plan considerable efforts were made and 12 varieties of tomato, 10 varieties of onion and 4 varieties of potato were evolved. Apart from having tolerance/resistance to important pests and diseases, these are high yielding and have better shelf-life with potential to minimize wastage. It has also been submitted that to address the issues pertaining to post-harvest-losses, researches have been taken up to develop the value added products in various crops. During the last three years, fifty technologies have been developed which are largely helpful in minimization of post-harvest losses. The Committee recommend the Department to develop technology for minimizing post-harvest losses and make the farmers aware about value addition technology. The Committee are of the considered opinion that proper marketing of post-harvest technologies are not only important from the point of revenue generation but also for providing alternate avenues to farmers of the country so that they can get remunerative prices for their products.

The Committee also recommend the Department to conduct a study for recognition of State/District specific horticulture crops in the Country and to rope in KVKs, Agricultural Universities in the State/ Districts to encourage cultivation of horticulture crops, create awareness about their marketability for enhancement of income. There is a huge potential for cultivation of medicinal and aromatic plants in the country. The Committee recommend the ICAR to give impetus to cultivation of medicinal and aromatic plants for raising the income of farmers.

1.12 In its reply, the Ministry has stated as under:-

Recommendation of the Committee has been noted for compliance. Accordingly, Department will put all required steps to utilize enhanced

allocation of funds during 2018-19 and subsequent years for approved programmes/activities.

Department has taken initiatives on development of value added products to minimize post-harvest losses in important horticultural crops. Department has developed several post-harvest technologies and some of these namely; Ready to Serve (RTS) beverage from acid lime, carbonated beverage from acid lime and Nagpur mandarin, Aonla Dill RTS, Aonla Fennel Squash, Aonla Fennel RTS, Aonla Coriander Squash, Aonla Coriander RTS, Aonla Tea, Aonla Biscuits, Aonla Cider, apricot fruit bar, cape gooseberry jam, osmo-dehydrated rose hips, Ready-to-Serve beverage and juice of pomegranate, minimal processing of pomegranate arils, pomegranate wine, extraction of high value virgin pomegranate seed oil, dehydration of potato tubers, potato chips and French Fries, chocolate from cocoa etc. and were commercialized.

All these post-harvest and value addition technologies are being popularized through training of farmers and other stakeholders.

The country has eight agro-climatic zones and all the mandated horticultural crops and relevant technologies are being identified and demonstrated by KVKs, agricultural universities and other line departments for adoption as per their suitability/ need in different agro-climatic zones and at State/ Districts level to create awareness about productivity enhancement and marketability for raising farm income.

Department is promoting cultivation of medicinal and aromatic plants in the country through ICAR-Directorate of Medicinal and Aromatic Plants at Anand, Gujarat along with 23 Centres of the ICAR-All India Coordinated Research Project (AICRP) on Medicinal and Aromatic Plants. In order to promote cultivation of medicinal and aromatic plants for raising the income of farmers, a total of 12 trainings on different aspects of Conservation, Cultivation and Post-harvest Management including Good Agricultural Practices and primary processing of Medicinal and Aromatic Plants were organized, and a total of 1029 farmers and other stakeholders were benefitted.

1.13 During the course of examination of Demands for Grants (2017-18) the Committee observed that the funds allocated under Horticulture Division were under-utilized and therefore had categorically stated that the

underutilization of funds is not acceptable to the Committee. The Committee desired the Department to take all required steps for optimal utilization of funds, especially when the allocation for the year 2018-19 has been substantially increased. In its Action Taken Reply, the Department has submitted that it will put all required steps to utilize enhanced allocation of funds during 2018-19 and subsequent years for approved programmes/activities.

Doubling of Farmers' Income by 2022, a noble and welfare vision of the Government has been acknowledged by the Committee and therefore the Committee had recommended the Department to conduct a study for recognition of State/District specific horticulture crops in the Country and to rope in KVKs, Agricultural Universities in the State/ Districts to encourage cultivation of horticulture crops, create awareness about their marketability for enhancement of income. There is a huge potential for cultivation of medicinal and aromatic plants in the country. The Committee had recommended the ICAR to give impetus to cultivation of medicinal and aromatic plants for raising the income of farmers. The Committee are happy to note that all the mandated horticultural crops and relevant technologies are being identified and demonstrated by KVKs, agricultural universities and other line departments for adoption as per their suitability/ need in different agro-climatic zones and at State/ Districts level to create awareness about productivity enhancement and marketability for raising farm income. The Committee would like the Department to continue its efforts in this direction more vigorously.

D. RECOMMENDATION (PARA NO. 6)

1.14 The Committee had observed/ recommended as under:-

The Department has informed that it has undertaken a number of steps to augment nutritive value of feed and fodder and meet demand for feed and make quality fodder available to the increasing animal population. ICAR is utilizing exotic and indigenous genetic resources through breeding and selection for improving the forage productivity and nutritive value of different cultivated and pasture species from different agro-climatic regions in India. Fodder crop improvement is being carried out by involving multi-disciplinary integrated approach for development of high yielding varieties. Main fodder crops include cultivated dual purpose cereal/grain crops, annual legumes, as well as perennial grasses (cultivated/rainfed) and range legumes. The Committee feel that availability of quality feed and fodder is essential for improvement of livestock health and productivity. They are of the view that often huge quantity of vegetables such as potatoes, onions etc get wasted in the country for various reasons. The Committee recommend the Department to carry out research on use of such vegetable wastages for feed and fodder for livestock.

Regarding use of antibiotics or medicated feed for livestock husbandry, the Committee were informed that research is being carried out on antibiotic resistance in livestock and creating awareness among farmers, veterinarians and students regarding use of antibiotics through joint collaboration with FAO and CDC sponsored schemes on anti-microbial resistance. Research on "Medicinal herbs as alternative to antibiotics as growth promoter in chicken" is being under taken, value added feed formulations are being prepared to substitute the antibiotics as growth promoter in rearing of chicken. Research is also being carried out on exploring alternatives to antibiotics i.e. probiotics, prebiotics, sinbiotics (pre and probiotics in combination), organic assets, essential oils / herbs in poultry. The Committee desire the Department to create awareness among stakeholders about restricted use of antibiotics in poultry because it can have adverse effect on human health. The Committee recommend the Department to expedite the research on use of medicinal herbs as an alternative to antibiotics.

1.15 The Ministry in its Action Taken Reply has stated as under:-

In-order to make use of vegetable waste in animal feeding system, research on region specific locally available feed ingredients in the north-east

region has been carried on Pig centers located in different parts of the country. Research indicated that Vegetable viz. cabbage, potato, tapioca, radish, pumpkin can be used as a supplement of pig feed to replace energy ration 10 to 15%. The use of vegetable kitchen waste available in rural household has been assessed and the feeding of average quantity of 1.5 kg dry matter/day can support 1 kg of milk production. Nutritive value of pineapple fruit, residues silage is better than maize green fodder and can be used as an alternate green fodder for ruminants. Work is also being carried out to improve shelf life of tomato pomace for use of livestock feed. It is submitted that the work on suggested lines will be further intensified / up scaled through the institutes with animal component in particular.

The research work on the alternative to antibiotics by using medicinal herbs is already being carried out by the Department. Accordingly, an Outreach Programme on Ethno-Veterinary Medicine, under which herbal feed additives is being explored to overcome antibiotics residues in poultry. Research on replacement of antibiotic growth promoter (AGP) with medicinal herbs, prebiotics, probiotics, symbiotic and organic acids is in progress. Further, awareness (trainings, workshop and advisory services) is being created among farmers and entrepreneurs for restricted use of antibiotics in poultry. A proposal under CAAST has been submitted to undertake evaluation of some herbiotic and combiotic preparations to be tested *in vitro* and in some animal models.

1.16 Keeping in view the need to augment nutritive value of feed and fodder and to make quality fodder available to the increasing animal population, the Committee had recommended the Department to carry out research on use of vegetable wastages for feed and fodder for livestock. The Committee are happy to note that in order to make use of vegetable waste in animal feeding system, research on region specific locally available feed ingredients in the north-east region has been carried on Pig Centres located in different parts of the country. Work is also being carried out to improve shelf life of tomato pomace for use of livestock feed. It has also been stated that the work on suggested lines will be further intensified / up scaled through the institutes

with animal component in particular. The Committee are of the view that research on feasibility of use of vegetable wastages as feed and fodder for livestock be carried out on priority basis and it should not be limited to only north-eastern part of the country.

Regarding the research work on the alternative to antibiotics by using medicinal herbs in poultry, the Department in its action taken reply, has submitted that research on replacement of antibiotic growth promoter (AGP) with medicinal herbs, prebiotics, probiotics, symbiotic and organic acids is in progress and awareness (trainings, workshop and advisory services) is being created among farmers and entrepreneurs for restricted use of antibiotics in poultry. While reiterating their recommendation, the Committee feel that since the matter pertains to human health, steps be undertaken to expedite the research on use of medicinal herbs as an alternative to antibiotics.

E. RECOMMENDATION (PARA NO. 8)

1.17 The Committee had recommended as under:-

The Committee appreciate the performance of KVKs during the last three years. The KVKs, as per mandated activities, conducted 97188 On-farm trials (OFTs) for assessment and refinement of technologies; conducted 3.21 lakh Frontline Demonstrations (FLDs); trained 40.9 lakh farmers including rural youth and farm women; trained 4.48 lakh extension personnel; benefited 392.54 lakh farmers through various extension activities; produced 87900 tonnes of seeds, 1252.42 lakh of planting material and 909.04 lakh of livestock strains and fingerlings; tested 13.36 lakh soil samples; and provided mobile agro-advisories on various facets of agriculture and allied sectors to 395.44 lakh farmers. The Committee, however, note that the infrastructure of some KVKs are not up to the desired level. The Committee desire that the infrastructure in all the 681 KVKs of the Country should be strengthened. There should be a Farmers' Hostel in each and every KVK with separate

rooms and dormitories where farmers can stay comfortably during their visit to a KVK. The Committee note that a study was conducted by the National Institute of Labour Economics Research and Development (NILERD), an autonomous institute under NITI Aayog to find out the impact of KVKs on dissemination of improved practices and technologies, in terms of outreach, knowledge, accessibility etc. The Study found that on an average each KVK covers 43 villages and 4,300 farmers about 80% of villages covered by KVK are over 10 km away from the KVK and 42% of technologies adopted by farmers resulted in higher productivity. In view of this the Committee feel that KVKs may be made a hub of activities to attract not only the farmers but also their families. Educational fairs, exhibitions etc. may be organized at these KVKs from time to time to impart knowledge to farmers and their families. Also, KVKs are an important link between the farmers and ICAR. The communication at these places should be a two-way process i.e. in addition to dissemination of available agricultural knowledge and technology to the farmers, the specialist at KVKs should listen to their problems and communicate the same to ICAR for carrying out further research.

The Committee feel that the extension schemes such as ATARIs, KVKs, DKMA, ARYA etc are highly beneficial means to work as a link between agricultural research and farmers. The objective, Lab to land, could only be accomplished by strengthening the outreach programmes. The Committee note though the existing system of KVKs requires to be strengthened by augmenting manpower, infrastructure etc, funds for the same are not being provided adequately. The Committee in their earlier reports have also been recommending for adequate allocation for extension schemes. The Committee recommend the Department to take up the matter of more allocation of funds with the Ministry of Finance. The Committee also desire that the Department should make all out efforts to spend the whole amount allocated under this Head.

1.18 The Ministry in its Action Taken Reply has stated as under:-

In accordance of recommendation of the Committee, the Department with the available funds for KVKs, supported establishment of Administrative Building, Farmers' Hostel, Soil & Water Testing Lab and Soil Testing Kits have been provided to 534, 470, 436 and 650 KVKs, respectively. The need based infrastructure including Farmers' Hostel in rest of the KVKs will be provided as per the availability of funds during 2018-19 and 2019-20.

The KVKs are regularly organizing different extension education activities for creating awareness on improved farm technologies and speeding

up large scale diffusion of latest scientific information among farmers including farm women and rural youth. During 2017-18, a total of 6.07 lakh extension education activities like, exhibitions, exposure visits, farmers' seminar, kisan ghosthi, kisan melas, field days, ex-trainees sammelan, advisory services, diagnostic and clinic services, method demonstrations, soil-health camps, soil-test campaigns, etc. were organized by KVKs in the country by which 144.15 lakh farmers, farm women and rural youth were benefitted.

The KVKs obtain the feedback from farmers on various demonstrated technologies and these feedbacks are forwarded to the ICAR Research Institutes and Agricultural Universities for further improvement of technologies and future research.

The recommendation of the Committee for allocation of additional funds for KVKs has been noted and shall be taken up at the RE stage.

1.19 The Committee had recommended that the existing system of KVKs requires to be strengthened by augmenting manpower, infrastructure etc, and funds for the same are not being provided adequately and therefore recommended the Department to take up the matter for more allocation of funds with the Ministry of Finance. The Committee in their earlier reports had also been recommending for adequate allocation for extension schemes. The Department in its Action Taken Reply, has submitted that allocation of additional funds for KVKs has been noted and shall be taken up at the RE stage. The Committee hope that the Department will pursue the matter with the concerned Ministry. The Committee are pleased to note that the KVKs are regularly organizing different extension education activities for creating awareness on improved farm technologies and speeding up large scale diffusion of latest scientific information among farmers including farm women and rural youth. The Committee also desire the Government to allocate

sufficient funds to the extension programmes. The Committee would like to be informed about the steps taken by the Government in this regard within three months of presentation of this Report. KVKs are an important link between the farmers and research in agriculture. The Committee had recommended that Educational fairs, exhibitions etc. may be organized at the KVKs from time to time to impart knowledge to farmers and their families. The communication at these places should be a two-way process i.e. in addition to dissemination of available agricultural knowledge and technology to the farmers, the specialist at KVKs should listen to their problems and communicate the same to ICAR for carrying out further research. In its Action Taken Reply, the Department has stated that The KVKs obtain the feedback from farmers on various demonstrated technologies and these feedbacks are forwarded to the ICAR Research Institutes and Agricultural Universities for further improvement of technologies and future research. The Committee desire the KVKs to identify the problems of the area as per the need of the farmers and prioritization of the identified problems as per their importance. The Committee further recommend the Department to identify and strengthen the KVKs whose performance are not up to the mark particularly in the backward districts of the country. Further the Committee reiterate that more and more programmes at KVKs be organized to encourage the participation of farmers.

**F. NATIONAL AGRICULTURAL HIGHER EDUCATION PROJECT
RECOMMENDATION (PARA NO. 10)**

1.20 The Committee had recommended as under:-

The Committee have been informed that a new programme National Agricultural Higher Education Project (NAHEP) has been launched. The objective of the Project is to support Participating Agricultural Universities and ICAR in providing more relevant and higher quality education to Agricultural University students. The challenges faced by AUs mirror those faced in general by higher education in India. The needs of the agricultural sector resonate with other sectors, i.e., highly trained workforce and relevant cutting-edge research. The current ICAR-Agricultural Universities (AU) System reform agenda requires global knowledge and international expertise to refine its approach and implementation. For this reason, ICAR has requested World Bank support as a knowledge adjunct to the proposed NAHEP. The Project supports the Country Partnership Strategy and addresses the three engagement areas of integration, transformation and inclusion. These engagement areas foresee increased agricultural productivity and support quality improvements of higher education to create a more skilled workforce that continuously improves the productivity of key sectors, including agriculture. The proposed Project is also a multi-Global Practice collaboration (Agriculture and Education) and is expected to support activities and results directly related to cross-cutting strategic areas of climate change, jobs and gender. The Committee have been informed that there was no separate allocation of fund during 2017-18 at BE/RE stage, however Rs 5.0 crore was marked from the Budget of Education division at BE Stage. So far the said amount has not been utilized. The Committee note that Rs. 7.89 crore has been provided for NAHEP for 2018-19 at BE stage. The Committee are not happy with the non-utilization of funds. The Committee advise the Department to be more prudent in future. The Committee are aware of the fact that ICAR through its institutes and rich human resource have immensely contributed to the growth and development of agriculture in the country but a lot remains to be done. The Committee hope that the project would contribute in strengthening and development of agricultural higher education in the country.

1.21 The Ministry in its Action Taken Reply has stated as under:-

The NAHEP is at the preliminary stage of its operation. Efforts are being made to make program fully functional by creating the need based infrastructure and manpower. Despite all the constraints, the project has

made some headway by utilizing an allocation of Rs.28.00 lakhs during the current FY 2017-18 for taking up various activities under the project. All efforts will be made to ensure maximum utilization of allocation earmarked in the BE 2018-19 through strategic planning and participation of all stakeholders to ensure that the targets set for the year are fully achieved without any shortfall.

1.22 While noting that a new programme National Agricultural Higher Education Project (NAHEP) has been launched with an objective to support Participating Agricultural Universities and ICAR in providing more relevant and higher quality education to Agricultural University students, the Committee had expressed its displeasure over non-utilization of funds earmarked for the Project during 2017-18. The Department in its Action Taken Reply has submitted that the NAHEP is at the preliminary stage of its operation and efforts are being made to make program fully functional by creating the need based infrastructure and manpower. The Department has also submitted that all efforts will be made to ensure maximum utilization of allocation earmarked in the BE 2018-19 through strategic planning and participation of all stakeholders. The Committee are of the view that strengthening of agricultural research system is *sine qua non* for development of agriculture in the country and that for better coherence, coordination and collaboration reforms are required in ICAR-Agricultural Universities (AU) System. The Committee, therefore, desire that steps be undertaken to expedite the implementation of the programme. The Committee would like to be informed of the efforts made by the Department in this regard at the earliest.

CHAPTER - II

OBSERVATIONS/RECOMMENDATIONS THAT HAVE BEEN ACCEPTED BY THE GOVERNMENT

ALLOCATION AND UTILISATION OF FUNDS

RECOMMENDATION (PARA NO. 1)

The Committee note that the budgetary allocation for the Department of Agricultural Research and Education for fiscal year 2018-19 has been substantially enhanced from Rs. 6800 crores during 2017-18(BE) to Rs. 7800 crores. The total Demand for 2018-19 under Scheme and Non-Scheme Heads together is Rs. 7800.00 crore as against proposal of Rs 8380.92 crore. Out of total allocation for 2018-19, Rs. 2914.77 crore is under the Scheme Head and Rs. 4885.23 crore under the Non-Scheme Head. The Committee note that the allocation at RE stage for Non-Scheme head during 2017-18 was increased from Rs. 4633.54 crore to Rs 4825.54 crore during 2017-18 whereas there was no change for Scheme head which remained as Rs.2166.46 crore. The Committee have been informed that the actual expenditure under Scheme Head is Rs. 1078.81 crore up to 31.12.17.

The Committee observe that despite no change in allocation of funds at RE stage during 2017-18 for Scheme Head, the actual expenditure of the Department was only around 50% up to December 2017. The Committee have been informed the reasons for less expenditure are that the termination of XIIth plan during 2016-17 and subsequent formulation, processing and approvals of SFC/ EFCs for next phase i.e. 2017-18 to 2019-20 took substantial time. The process of approvals of SFC/EFC for the next phase completed by September-October, 2017, which is the main reason for low expenditure during first three quarters of current financial year. Recognizing the importance of agricultural research, education and extension for agriculture growth and development in the country, the Committee in its earlier reports have been emphasizing on the need for increase in allocation to DARE. The Committee are happy to note that the allocation has been substantially enhanced for 2018-19. However, the Committee feel that mere enhancement is not suffice, rather optimal utilization of funds is more important because non-utilization of funds defeats the very purpose of enhancement. The reasons cited by the Ministry for underutilization of funds during the year 2017-18 are administrative and procedural which could have been easily avoided with proper planning and foresight. The Committee, therefore, recommend that the Department should realistically assess its requirement of funds and seek funds only on the basis of this assessment and

closely monitor expenditure so that situation of large amount of funds remaining unutilized at the end of the financial year can be avoided.

REPLY OF THE GOVERNMENT

Recommendation of the committee has been noted for necessary compliance. Accordingly, Department is monitoring the utilization of allocated funds regularly at monthly intervals during Senior Officers meeting. The Department will make full efforts so that the allocated funds are utilized as per respective SFC/EFC approvals.

Comments of the Committee

For comments of the Committee please refer to Para No.1.7 of **Chapter - I** of this Report.

Ministry of Agriculture & Farmers Welfare O.M No.7 (5)/2018, dated 29th May, 2018, Department of Agricultural Research and Education

PROPORTION OF BUDGETARY ALLOCATION VIS-A - VIS CENTRAL OUTLAY RECOMMENDATION (PARA NO. 2)

The Committee note that the proportion of budgetary allocation of the Department was 0.30% of total Central Plan Outlay in 15-16, 0.31% in 2016-17 and 0.32% in 2017-18. The Department has informed that the budgetary allocation for the year 2018-19 is Rs. 7800.00 crore which is also 0.32% of total Central Plan Outlay as against the proposed amount of Rs 8380.92 crores for the fiscal year 2018-19. The Committee have also been informed that the proportion of budgetary allocations made in favour of Department out of total budget of the Government during the last three fiscal years are much less as compared to the Ministries/Departments like Higher Education, Food & Public Distribution and Fertilizers. The Committee note that for the last three fiscal year the proportion of budgetary allocation of the department is more or less same. While noting the increase in allocation for 2018-19, the Committee are of the opinion that this increase is just incremental and falls way short of what the agriculture research, education and extension actually needs. The Committee urge the Department to impress upon the Ministry of Finance to allocate funds to them as per their requirement at RE stage so that agricultural research, education and extension do not suffer for want of funds.

REPLY OF THE GOVERNMENT

Recommendation of the committee has been noted for necessary compliance.

Comments of the Committee

For comments of the Committee please refer to Para No.1.10 of **Chapter - I** of this Report.

Ministry of Agriculture & Farmers Welfare O.M No.7 (5)/2018, dated 29th May, 2018, Department of Agricultural Research and Education

CROP SCIENCE

RECOMMENDATION (PARA NO.3)

The Committee note that improvement of crops is the mandate of Crop Science Division. The main emphasis of the Division has been on development of trait-specific high yielding crop varieties and hybrids. During 2017-18 a total 209 including 13 bio-fortified, new varieties/hybrids tolerant to various biotic and abiotic stresses with enhanced quality have been developed for Cereals, Pulses, Oilseeds, Commercial and Forage crops. The Committee have been apprised that in order to enhance productivity and improve farmers income in the country, ICAR Institutes under crop science division in collaboration with SAUs are conducting basic and strategic research related to improvement and production of rice, wheat, maize, millets, fodder crops, oilseeds, pulses, sugarcane, cotton and other fiber crops through 26 commodity based research institutes and 32 All India Coordinated Research Projects (AICRPs) and All India Network Projects (AINPs) to develop location specific crop varieties and matching technologies as per the agro ecological needs. Newer approaches like millets for diversification of food basket and nutritional security, terminal heat tolerance in wheat, improved rice hybrids and basmati varieties, quality protein maize hybrids with better adaptability, tobacco seed oil for edible purpose, high sugar varieties with novel research methodology for better sugar recovery from sugarcane, well adapted high yielding oilseeds and pulses for better nutrition, high strength cotton genotypes and high density planting system for cotton besides enhanced fibre quality in jute and allied fibres are other areas that have received attention.

While appreciating the work done by this Division, the Committee feel that a lot still remains to be done. Often the quality of seeds which actually reach the

farmers is different from that developed by ICAR. Even the Secretary, DARE agreed to this fact, during the evidence. The Committee desire that efforts be made in this direction so that the good quality seeds reach the farmers.

The Committee note that 13 bio-fortified varieties of field vegetables and fruits crops have been developed by ICAR. The Committee recommend that in addition to high-yielding and resistant varieties the ICAR should also focus on developing more of bio-fortified varieties which can solve the problems of malnutrition in the country to a large extent. The Committee observe that efforts have been made by ICAR to bring all the newly released varieties in seed chain so that quality seeds of these varieties may reach the farmers in minimum time which helps in enhancing the productivity and improve farmers' income. The Committee recommend that while keeping pace with the demands for new varieties ICAR should also strive to conserve the traditional varieties of seeds with some specific qualities so as to save them from becoming extinct.

REPLY OF THE GOVERNMENT

The ICAR is producing breeder seed of released varieties as per the indented requirement of Department of Agriculture Cooperation and Farmers Welfare (DAC&FW) for uses by public as well as private sector organizations in production of foundation, certified and labelled seeds to maintain the effective seed production chain in making quality seed available to the farmers at affordable price. ICAR has nation-wide network of 41 centres representing 23 states of Seed Projects for quality seed production. In addition, ICAR is also strengthening the infrastructure under seed domain of National Agricultural Research System with network of 63 partners across the country involving ICAR Institutes, SAUs and CAUs for making available quality seed to farmers.

The concerted efforts of NARS (ICAR institutes, State Agricultural Universities, Public Sector Undertakings and other universities) led to production of 1.22 lakh q breeder seeds of different field crops during 2016-17 as against an indent of 1.04 lakh q. ICAR is also contributing sizably in Indian Seed Domain by producing quality seed to the tune of 6.0 lakh quintals per annum with an increment of 0.4 to 0.8 per cent per annum amounting to a cumulative 2.5 per cent in Seed Replacement Rate (SRR) of major crop species during XII plan period. During 2016-17, ICAR produced 6.20 lakh quintals of quality seed including foundation, certified and labelled seeds under National Seed Project (Crops) and produced 2.91 lakh quintals seeds through Farmers Participatory Seed Production programme. All possible efforts are being made by ICAR to maintain the quality of seed through strict monitoring during the cropping system involving specialist/officials from producing Institutes, Crop

Breeder, National Seed Corporation, State Seed Certification Agencies and Project Coordinating Units of respective crops.

The quality seed which include foundation, certified and labelled, is also being produced by the National Seed Corporation, State Seed Corporations, Public Sector Undertakings, NGOs and Private seed companies. ICAR's main role is limited upto the monitoring the quality of Breeder Seed and the other classes of seed produced under ICAR Seed Project. Rest of the seed production is controlled by Seed Certification agencies of respective states in terms of quality control at all stages from seed source to field selection, harvesting, processing, storage, quality evaluation, marketing and so on. Utmost care is being taken in production of best quality breeder seed following all principles of seed production under Seed Projects and its associated centres. Annual Breeder Seed Review Meetings are held to review the program periodically involving all the centres and DAC&FW, all public sector seed producing organizations and representatives of Seed Associations. Issues related to seed quality, availability, short falls, non-lifting, varietal mismatches, breeder seed price etc. are discussed, accordingly directives and advisories are issued time to time.

Department has taken initiatives on development of bio-fortified varieties in crops such as sweet potato, cauliflower, etc. under crop improvement programmes. Sweet potato varieties with higher β carotene and anthocyanin contents and cauliflower variety rich in Vitamin-A have been identified and released. The sweet potato variety 'BhuSona' is a β carotene rich (12.5 - 14.0 mg/100g) with tuber yield 20-25 t/ha, another variety 'Bhu Krishna' anthocyanin rich (85 to 90 mg/100g) have 22-25 t/ha tuber yield. The cauliflower variety PusaKesarivitA-1 is rich in β -carotene (5 to 10ppm) with 40-50t/ha yield potential. Efforts are being made to breed improved varieties of horticultural crops for desired traits. After identification and/or multi-location trial and notification, varieties of horticultural crops are being put in seed/plant material chain. In addition, some of the varieties are being licensed to Private Sector Undertakings for large scale multiplication for the larger benefit of farmers.

Department is placing all efforts to conserve the traditional varieties of seeds with some specific qualities so as to save them from becoming extinct. Regular explorations are being conducted and germplasm accessions of target horticultural crops are being collected, evaluated and further used in crop improvement programs. Traditional varieties are being registered with the Protection of Plant Varieties and Farmers Rights Authority (PPV & FRA), of the Government of India. ICAR-National Bureau of Plant Genetic Resources (NBPGR), New Delhi is the nodal institute at national level for collection, characterization, evaluation, conservation and exchange of plant genetic resources which also include traditional varieties and land races with specific qualities for protecting them from getting extinct. The NBPGR has

collected and conserved 76799 accessions (cereals 17927, millets 15979, grain legumes 10272, oilseeds 21250, forages 1413, fibre crops 258, vegetables 6032, fruits and nuts 08, pseudo-cereals 1475, spices 949, medicinal and aromatic 882, ornamentals 07 and agroforestry 345) of traditional varieties/landraces of various agri-horticultural crops in the National Gene bank belonging to 34 states of the Country. A total of 16052 (979 Traditional varieties; 15073 Landraces)accessionsare multiplied as per the viability aspects of the seeds and the seeds of these varieties are being shared in the crop improvement programmes.

Ministry of Agriculture & Farmers Welfare O.M No.7 (5)/2018, dated 29th May, 2018, Department of Agricultural Research and Education

HORTICULTRE SCIENCE

RECOMMENDATION (PARA NO. 4)

The Committee note that the thrust areas of Horticulture Science Division are enrichment of genetic resources, development of new cultivars with resistance mechanism to biotic and a biotic stresses, appropriate production technology and health management system. The perceived threats on climate change pose greater challenge in achieving the targets in the horticultural crops now than ever before. Some of the issues like collection, conservation and characterization of germ plasm for breeding improved varieties, production technology with special reference to a biotic stresses and protected cultivation, seed and planting material, plant health management and food safety, post-harvest handling, processing and value addition, labour needs and mechanization are being addressed in a well-defined timeframe. The Committee note that Rs. 200 crore has been allocated for 2018-19 at BE stage to the Horticulture Division. However, this Division was able to utilize only Rs.91.14 crore (to 31.12.17) out of the allocated funds of Rs.154.90 crore during the year 2017-18. Stating the reasons for under utilization, the Department has submitted that the EFCs of all the five Schemes were approved during September-October to December, 2017. As a result, expenditure involving policy decisions were deferred for the time being, and hence there was reduced expenditure. However, research activities were carried out within the available funds and there was no adverse impact on major research programmes. The Department has observed that henceforth, the budget utilization will be hastened by taking up pending works and creation of assets and strengthening of research facilities. The underutilization of funds is not acceptable to the Committee. They desire the Department to take all required steps for optimal utilization of funds, especially when the allocation for the year 2018-19 has been substantially increased.

The Committee note that horticulture sector has great scope for expansion and has vast potential for enhancing production, productivity and value added products. The Committee have been informed that during XII Five Year Plan considerable efforts were made and 12 varieties of tomato, 10 varieties of onion and 4 varieties of potato were evolved. Apart from having tolerance/resistance to important pests and diseases, these are high yielding and have better shelf-life with potential to minimize wastage. It has also been submitted that to address the issues pertaining to post-harvest-losses, researches have been taken up to develop the value added products in various crops. During the last three years, fifty technologies have been developed which are largely helpful in minimization of post-harvest losses. The Committee recommend the Department to develop technology for minimizing post-harvest losses and make the farmers aware about value addition technology. The Committee are of the considered opinion that proper marketing of post-harvest technologies are not only important from the point of revenue generation but also for providing alternate avenues to farmers of the country so that they can get remunerative prices for their products.

The Committee also recommend the Department to conduct a study for recognition of State/District specific horticulture crops in the Country and to rope in KVKs, Agricultural Universities in the State/ Districts to encourage cultivation of horticulture crops, create awareness about their marketability for enhancement of income. There is a huge potential for cultivation of medicinal and aromatic plants in the country. The Committee recommend the ICAR to give impetus to cultivation of medicinal and aromatic plants for raising the income of farmers.

REPLY OF THE GOVERNMENT

Recommendation of the Committee has been noted for compliance. Accordingly, Department will put all required steps to utilize enhanced allocation of funds during 2018-19 and subsequent years for approved programmes/activities.

Department has taken initiatives on development of value added products to minimize post-harvest losses in important horticultural crops. Department has developed several post-harvest technologies and some of these namely; Ready to Serve (RTS) beverage from acid lime, carbonated beverage from acid lime and Nagpur mandarin, Aonla Dill RTS, Aonla Fennel Squash, Aonla Fennel RTS, Aonla Coriander Squash, Aonla Coriander RTS, Aonla Tea, Aonla Biscuits, Aonla Cider, apricot fruit bar, cape gooseberry jam, osmo-dehydrated rose hips, Ready-to-Serve beverage and juice of pomegranate, minimal processing of pomegranate arils, pomegranate wine, extraction of high value virgin pomegranate seed oil, dehydration

of potato tubers, potato chips and French Fries, chocolate from cocoa etc. and were commercialized.

All these post-harvest and value addition technologies are being popularized through training of farmers and other stakeholders.

The country has eight agro-climatic zones and all the mandated horticultural crops and relevant technologies are being identified and demonstrated by KVKs, agricultural universities and other line departments for adoption as per their suitability/ need in different agro-climatic zones and at State/ Districts level to create awareness about productivity enhancement and marketability for raising farm income.

Department is promoting cultivation of medicinal and aromatic plants in the country through ICAR-Directorate of Medicinal and Aromatic Plants at Anand, Gujarat along with 23 Centers of the ICAR-All India Coordinated Research Project (AICRP) on Medicinal and Aromatic Plants. In order to promote cultivation of medicinal and aromatic plants for raising the income of farmers, a total of 12 trainings on different aspects of Conservation, Cultivation and Post-harvest Management including Good Agricultural Practices and primary processing of Medicinal and Aromatic Plants were organized, and a total of 1029 farmers and other stakeholders were benefitted.

Comments of the Committee

For comments of the Committee please refer to Para No.1.13 of **Chapter - I** of this Report.

Ministry of Agriculture & Farmers Welfare O.M No.7 (5)/2018, dated 29th May, 2018, Department of Agricultural Research and Education

ANIMAL SCIENCE

RECOMMENDATION (PARA NO. 5)

The Committee note that Animal Science Division is engaged in development of new technologies to support production enhancement, profitability, competitiveness and sustainability of livestock and poultry sector for food and nutritional security. The mission is to facilitate need based priority research in livestock and poultry sector in on-going and new emerging areas to support productivity increase, thereby reducing the gap between potential and actual yield in the current era of globalization to meet the challenges ahead. The Committee further

note that to conserve indigenous cattle breeds of superior quality and genetical improvement of the indigenous varieties the Department in collaboration with state agricultural / veterinary universities, NGOs / state animal husbandry departments is undertaking indigenous improvement programme covering three indigenous breeds i.e. Sahiwal, Gir and Kankrej in their respective breeding tracts. The project is aimed to conserve, propagate and improve the genetic potential of these three indigenous cattle breeds. During the course of evidence, the Department informed that the steps have been taken to identify nondescript livestock in the country. The Committee are of the view that improvement of traditional varieties of livestock is very important as these varieties can provide farmers an option to increase productivity and profitability at low cost as maintenance of traditional livestock is easy as compared to breeds based on imported varieties. The Committee, therefore, desire the Department to give impetus for identification, registration, conservation and improvement of traditional and nondescript varieties of livestock throughout the country

REPLY OF THE GOVERNMENT

ICAR characterized 18 new animal populations during the XIIth Plan. Nine populations have been registered as breeds and many more are under process. Two native cattle (Ongole & Bargur) one sheep (Poonchi) and one chicken (Harringhatta Black) were conserved with the animal keepers.

Till date, 169 animals have been registered as breeds and during the last one year, 9 new populations (3 cattle, 2 goat, one sheep, 2 camel, one duck) are being characterized, one camel (Kharai) and chicken (Ankleswar) breed is being conserved in their natural habitat. Thirteen (13) native indigenous sheep breeds are identified, registered, maintained, conserved and being improved through research across the country. About 1800 indigenous native sheep breeds are made available to farmers in different states of the country for genetic improvement of their flocks. Genetic improvement of 14 indigenous goat breed/genotypes in their natural habitat is being under taken. Three native chicken breeds namely Aseel, Ghagus and Nicobar are being conserved and improved for the economic traits (body weight and egg production). The improved Aseel birds are being provided to the farmers for better egg production and body weight. One chicken line PD-1 has also been registered. Conservation and genetic improvement of the important indigenous cattle breeds of our country viz., Gir, Kankrej and Sahiwal is implemented in collaboration with State Agricultural/ Veterinary Universities, NGOS, Livestock Development Boards and Gaushalas and also involving farmer herds. So far, 3500 Kankrej, 10740 Gir and 1073 Sahiwal cows from the farmer herds covered under the programme. A total of 1084 Sahiwal, 4623 Gir and 1537 Kankrej daughters born. 159500, 121100 and 157500 frozen semen doses of Gir, Kankrej and Sahiwal bulls have been frozen. A total of 120880 frozen semen doses of the three breeds viz., Gir, Kankrej

and Sahiwal were made available to the stakeholders for improvement of farmer's animals of the respective breeds/ non-descript. The available semen doses may be used under the development schemes like Gokul Mission, etc. of DADF, GoI.

Five important breeds of chicken namely, Aseel (Kagar, Peela), Kadaknath, Nicobari, Ankleswar and Silkie breeds are being conserved in pure form and improved for 20-week body weight (Aseel Peela). The ecotypes like frizzle and naked neck are also being conserved.

Identification and characterization of local pig varieties for seven pig breeds (viz. Ghungroo of West Bengal, Niang Megha of Meghalaya, Agonda Goan of Goa, Nicobari of A&N Island, Doom of Assam, TenyiVo of Nagaland and Zovak of Mizoram) in collaboration with respective state Government organizations is being undertaken and these varieties have been registered with National Database. Improvement of local varieties of germplasm was done by purposive cross-breeding programme. Region specific eight new improved crossbred varieties of pig with higher production potential were developed and released by the farmers' benefit. These include Rani, Asha and HD-K75 from Assam, Lumsniang from Meghalaya, Jarshuk from Jharkhand, Mannuthy White from Kerala, TANUVAS KPM Gold from Tamilnadu and SVVU T-17 from Andhra Pradesh.

A total of five (5) buffalo breeds are being improved through progeny testing across 6 states viz. Haryana, Punjab, Rajasthan, Gujarat, UP and Bihar. The State and Central Animal Husbandry Departments of Government of India may use the progeny testing semen of cattle and buffalo available with the ICAR in their development schemes being undertaken across the country for giving impetus productivity enhancement.

Ministry of Agriculture & Farmers Welfare O.M No.7 (5)/2018, dated 29th May, 2018, Department of Agricultural Research and Education

RECOMMENDATION (PARA NO. 6)

The Department has informed that it has undertaken a number of steps to augment nutritive value of feed and fodder and meet demand for feed and make quality fodder available to the increasing animal population. ICAR is utilizing exotic and indigenous genetic resources through breeding and selection for improving the forage productivity and nutritive value of different cultivated and pasture species from different agro-climatic regions in India. Fodder crop improvement is being carried out by involving multi-disciplinary integrated approach for development of high yielding varieties. Main fodder crops include cultivated dual purpose cereal/grain crops, annual legumes, as well as perennial grasses (cultivated/rainfed)

and range legumes. The Committee feel that availability of quality feed and fodder is essential for improvement of livestock health and productivity. They are of the view that often huge quantity of vegetables such as potatoes, onions etc get wasted in the country for various reasons. The Committee recommend the Department to carry out research on use of such vegetable wastages for feed and fodder for livestock.

Regarding use of antibiotics or medicated feed for livestock husbandry, the Committee were informed that research is being carried out on antibiotic resistance in livestock and creating awareness among farmers, veterinarians and students regarding use of antibiotics through joint collaboration with FAO and CDC sponsored schemes on anti-microbial resistance. Research on “Medicinal herbs as alternative to antibiotics as growth promoter in chicken” is being under taken, value added feed formulations are being prepared to substitute the antibiotics as growth promoter in rearing of chicken. Research is also being carried out on exploring alternatives to antibiotics i.e. probiotics, prebiotics, sinbiotics (pre and probiotics in combination), organic assets, essential oils / herbs in poultry. The Committee desire the Department to create awareness among stakeholders about restricted use of antibiotics in poultry because it can have adverse effect on human health. The Committee recommend the Department to expedite the research on use of medicinal herbs as an alternative to antibiotics.

REPLY OF THE GOVERNMENT

In-order to make use of vegetable waste in animal feeding system, research on region specific locally available feed ingredients in the north-east region has been carried on Pig centers located in different parts of the country. Research indicated that Vegetable *viz.* cabbage, potato, tapioca, radish, pumpkin can be used as a supplement of pig feed to replace energy ration 10 to15%.The use of vegetable kitchen waste available in rural household has been assessed and the feeding of average quantity of 1.5 kg dry matter/day can support 1 kg of milk production. Nutritive value of pineapple fruit, residues silage is better than maize green fodder and can be used as an alternate green fodder for ruminants. Work is also being carried out to improve shelf life of tomato pomace for use of livestock feed. It is submitted that the work on suggested lines will be further intensified / up scaled through the institutes with animal component in particular.

The research work on the alternative to antibiotics by using medicinal herbs is already being carried out by the Department. Accordingly, an Outreach Programme on Ethno-Veterinary Medicine, under which herbal feed additives is being explored to overcome antibiotics residues in poultry. Research on replacement of antibiotic growth promoter (AGP) with medicinal herbs, prebiotics, probiotics, symbiotic and organic acids is in progress. Further, awareness (trainings, workshop and advisory

services) is being created among farmers and entrepreneurs for restricted use of antibiotics in poultry. A proposal under CAAST has been submitted to undertake evaluation of some herbiotic and combiotic preparations to be tested *in vitro* and in some animal models.

Comments of the Committee

For comments of the Committee please refer to Para No.1.16 of **Chapter - I** of this Report.

Ministry of Agriculture & Farmers Welfare O.M No.7 (5)/2018, dated 29th May, 2018, Department of Agricultural Research and Education

AGRICULTURE EXTENSION

RECOMMENDATION (PARA NO. 7)

The Committee note that Agricultural Extension Division has mandate of dissemination of available agricultural knowledge and technologies to end users through 11 Agricultural Technology Application Research Institutes, 01 Directorate of Knowledge Management in Agriculture (DKMA) and Krishi Vigyan Kendras (KVKs). The Committee note that the Division with network of 681 KVKs in the country is carrying out on farm testing of location specific agricultural technology and frontline demonstration to demonstrate the production and protection potential of different crops, livestock, poultry and fisheries. The Committee, however, are concerned to note that out of the budgetary allocation of Rs.232.51 crore during the year 2017-18, the actual expenditure has only been Rs.165.24 crore. The Committee note that for the year 2018-19 the budgetary allocation has been increased only marginally to Rs. 241.81 crore. Explaining the reasons for the marginal increase in allocation for agriculture extension, the Department informed that after merging of Plan & non-Plan from 2017-18 onwards the Salaries, TA, Pension and other administrative expenses have been separated out and being provided for under the Non-Scheme component. Rs. 232.00 crore for 2017-18 and Rs. 241.81 crore under BE for 2018-19 are provided for Grant in Aid-Capital & Grant in Aid-General only. The new programmes shall be initiated keeping in view the budgetary allocation. The horizontal expansion of the activities may have to be re-adjusted in accordance with the budgetary provisions during the year.

REPLY OF THE GOVERNMENT

Recommendations of the Committee have been noted for compliance. Department shall initiate/implement/ expansion of activities of agriculture extension

programs for making available the benefits of new agricultural technologies to the Farmers within the budgetary allocations. The available funds shall also be utilized for carrying out the mandated activities and development of need based infrastructure at KVKs.

Ministry of Agriculture & Farmers Welfare O.M No.7 (5)/2018, dated 29th May, 2018, Department of Agricultural Research and Education

RECOMMENDATION (PARA NO. 8)

The Committee appreciate the performance of KVKs during the last three years. The KVKs, as per mandated activities, conducted 97188 On-farm trials (OFTs) for assessment and refinement of technologies; conducted 3.21 lakh Frontline Demonstrations (FLDs); trained 40.9 lakh farmers including rural youth and farm women; trained 4.48 lakh extension personnel; benefited 392.54 lakh farmers through various extension activities; produced 87900 tonnes of seeds, 1252.42 lakh of planting material and 909.04 lakh of livestock strains and fingerlings; tested 13.36 lakh soil samples; and provided mobile agro-advisories on various facets of agriculture and allied sectors to 395.44 lakh farmers. The Committee, however, note that the infrastructure of some KVKs are not up to the desired level. The Committee desire that the infrastructure in all the 681 KVKs of the Country should be strengthened. There should be a Farmers' Hostel in each and every KVK with separate rooms and dormitories where farmers can stay comfortably during their visit to a KVK. The Committee note that a study was conducted by the National Institute of Labour Economics Research and Development (NILERD), an autonomous institute under NITI Aayog to find out the impact of KVKs on dissemination of improved practices and technologies, in terms of outreach, knowledge, accessibility etc. The Study found that on an average each KVK covers 43 villages and 4,300 farmers about 80% of villages covered by KVK are over 10 km away from the KVK and 42% of technologies adopted by farmers resulted in higher productivity. In view of this the Committee feel that KVKs may be made a hub of activities to attract not only the farmers but also their families. Educational fairs, exhibitions etc. may be organized at these KVKs from time to time to impart knowledge to farmers and their families. Also, KVKs are an important link between the farmers and ICAR. The communication at these places should be a two-way process i.e. in addition to dissemination of available agricultural knowledge and technology to the farmers, the specialist at KVKs should listen to their problems and communicate the same to ICAR for carrying out further research.

The Committee feel that the extension schemes such as ATARIs, KVKs, DKMA, ARYA etc are highly beneficial means to work as a link between agricultural

research and farmers. The objective, Lab to land, could only be accomplished by strengthening the outreach programmes. The Committee note though the existing system of KVKs requires to be strengthened by augmenting manpower, infrastructure etc, funds for the same are not being provided adequately. The Committee in their earlier reports have also been recommending for adequate allocation for extension schemes. The Committee recommend the Department to take up the matter of more allocation of funds with the Ministry of Finance. The Committee also desire that the Department should make all out efforts to spend the whole amount allocated under this Head.

REPLY OF THE GOVERNMENT

In accordance of recommendation of the Committee, the Department with the available funds for KVKs, supported establishment of Administrative Building, Farmers' Hostel, Soil & Water Testing Lab and Soil Testing Kits have been provided to 534, 470, 436 and 650 KVKs, respectively. The need based infrastructure including Farmers' Hostel in rest of the KVKs will be provided as per the availability of funds during 2018-19 and 2019-20.

The KVKs are regularly organizing different extension education activities for creating awareness on improved farm technologies and speeding up large scale diffusion of latest scientific information among farmers including farm women and rural youth. During 2017-18, a total of 6.07 lakh extension education activities like, exhibitions, exposure visits, farmers' seminar, kisan melas, field days, ex-trainees sammelan, advisory services, diagnostic and clinic services, method demonstrations, soil-health camps, soil-test campaigns, etc. were organized by KVKs in the country by which 144.15 lakh farmers, farm women and rural youth were benefitted.

The KVKs obtain the feedback from farmers on various demonstrated technologies and these feedbacks are forwarded to the ICAR Research Institutes and Agricultural Universities for further improvement of technologies and future research.

The recommendation of the Committee for allocation of additional funds for KVKs has been noted and shall be taken up at the RE stage.

Comments of the Committee

For comments of the Committee please refer to Para No.1.19 of **Chapter - I** of this Report.

Ministry of Agriculture & Farmers Welfare O.M No.7 (5)/2018, dated 29th May, 2018, Department of Agricultural Research and Education

AGRICULTURE EDUCATION

RECOMMENDATION (PARA NO. 9)

The Committee note that Agriculture Education Division of the Department strives for maintaining and upgrading quality, relevance and strengthening of higher agricultural education through partnership with 6 Agricultural Universities, ICAR Deemed-to-be-Universities, Central Agricultural University and Central Universities with Agriculture Faculty by providing support for student and faculty amenities and for holistic development of students. Quality assurance in higher agricultural education is pursued through Accreditation of agricultural universities, their constituent colleges and programmes.

The Committee note that Agriculture Education Division coordinates various activities related to education planning, human resource development and quality reforms. The Committee also note that out of total allocation i.e Rs. 694.66 crore during 2017-18 for agriculture education, the actual utilization was Rs. 211.14 crore till 31.12.17. The allocation for the Division during 2018-19 has been enhanced to Rs. 725. 13 crore as against proposed allocation of Rs. 731.22 crore by the Department. The Committee have been informed that under-utilization of funds has been mainly due to the approval of the SFC/EFCs of the schemes which have made mostly in the latter half of the financial year and CCEA note of the scheme is yet to be approved by the Government. Hence, funds allotted for non-recurring items (works and equipments) could not be utilized. As soon CCEA note is approved, efforts will be made to expend the remaining amount. While appreciating the enhancement in allocation for agriculture education, the Committee are of the considered view that the Department can justify its demand for additional resources only when it is able to first utilize the entire resources allocated to it. The Committee, therefore, recommend that the Department must make sincere efforts to utilize the allocated funds by way of meticulous planning, timely implementation and stricter monitoring of schemes/projects. As informed by DARE, four Institutes namely, Indian Agricultural Research Institute, Indian Veterinary Institute, National Dairy Research Institute (NDRI) and Central Institute of Fisheries Education under ICAR, have been bestowed with Deemed-to-be University status. The Committee also recommend the Department to make efforts for expansion of NDRI as to strengthen its R&D capacity along with up gradation of its institutes viz. NAARM, Hyderabad etc to Deemed-to-be University status. The Committee desire to be apprised of the outcome of report of external independent committees constituted to review the utilization of grants in XII Plan.

REPLY OF THE GOVERNMENT

The recommendation of the Committee to make sincere efforts to utilize the allocated funds by way of meticulous planning, timely implementation and stricter monitoring of schemes/projects has been noted for compliance. Accordingly, ICAR made all efforts to utilize the budget allotted at the RE 2017-18 and was able to utilize about 92.12% of its allocation with strategic and meticulous planning towards the end of the FY 2017-18. As per the recommendation of the Committee, the funds utilization efficiency, planning and monitoring of schemes projects will be further accelerated at various levels.

The NAARM is the only unique institution in the National Agricultural Research and Education System (NARES) for providing capacity building, training programs and strategic planning for better implementation of policy decisions. Over the years, the mandate of NAARM has expanded tremendously including activities of approximately 75 state agri-related universities, off-campus training programs, PGDMA education programs and NAARM is the hub of entrepreneurship/agri-start up incubations. NAARM with its 62 faculty strength and world class infrastructure facilities conducts national level academic and education programs. Department is taking all necessary steps to strengthen the R&D capacity of NAARM.

Two external committees were constituted for review of ICAR and its outcome during 12th Plan. The first committee under the Chairmanship of Dr. T. Ramasami, constituted for External Peer Review has submitted its report and the recommendations are under examination. Another committee was constituted under the Chairmanship of Dr. Deepak Pental to review research and other outcomes of schemes. The committee has made deliberations and the 2nd meeting was convened on 3rd April, 2018. The committee is likely to submit the report shortly.

Ministry of Agriculture & Farmers Welfare O.M No.7 (5)/2018, dated 29th May, 2018, Department of Agricultural Research and Education

AGRICULTURAL ENGINEERING **RECOMMENDATION (PARA NO. 11)**

The Committee note that Agricultural Engineering Division is involved in development and demonstration of technologies related to mechanization of production and post-production agriculture using conventional and non-conventional energy sources and includes mechanization of irrigation and drainage activities; post-harvest and value addition of agricultural products and by products. During

2017-18, division developed 55 Technologies/equipment/machines, 16 products and 07 process protocols for farm mechanization, post-harvest processing and value addition. A total of 7610 different designs of prototypes were manufactured and supplied to different stakeholders. The Committee note that agriculture engineering being the backbone of agriculture sector a lot needs to be done in this field. The Committee are not happy with the financial performance of this area. Out of the allocated funds of Rs.42.6 crore during 2017-18 actual expenditure has only been Rs.26.46 crore. Now, Rs.100 crore have been allocated for the year 2018-19. The Committee recommend that the Department should strive to utilize this huge amount during the year 2018-19 through meticulous planning and monitoring.

The Committee note that Agricultural Engineering research is devoted to agricultural mechanization leading to enhancing agricultural productivity, 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 and conducting research and development, prototype production, feasibility testing, frontline demonstration and promoting custom hiring of farm equipment and machinery to bridge identified mechanization gaps and creating employment opportunities in the rural sector.

The Committee observe that most of the farmers in the country are small and marginal farmers with small land holdings. The development of small, effective and economical agricultural implements are sine qua non for development small and marginal farmers in the country. The mission of the government to double the farmers' income can only be achieved through mechanization of agriculture with emphasis on mechanization of small holdings. The low cost input in mechanization would help the farmers in increasing the productivity and raising their income. The Committee, therefore, recommend the Department to develop small and economical machinery keeping in mind the need of small and marginal farmers. The Committee also note that Custom Hiring Centers for farm implements and equipments have been helpful in mechanization of agriculture. The Centers not only create employment opportunities for rural youth but also provide the farmers implements and equipments at low cost. The Committee recommend that the rural youth from all over the country be involved to promote Custom Hiring Centers and training be imparted to custom hiring entrepreneurs so as to ensure maximum expansion of these centers

REPLY OF THE GOVERNMENT

The Department is putting all efforts to utilize the allocated funds, during 2017-18 98.88% of allocated (Rs 42.6 Corers) funds were utilized (Rs 41.99 Crores). Similarly, sincere efforts are being made in utilizing allocated funds of Rs 100 Crores during 2018-19.

On the lines of the recommendations of the Committee, Department is working to develop small and economical machinery keeping in mind the need of small and marginal farmers, also on farm implements and equipments for Custom Hiring Centers to help in mechanization of agriculture. Accordingly, Department is developing manually and bullock operated implements and machines, small and economical renewable energy gadgets considering the need of small and marginal farmers. For tractor and power operated machines also, the economization of machines is kept in view. Department is also developing farm implements suitable for small and marginal farmers on individual ownership basis and high capacity equipment to be used through custom hiring services. Ten centers have R&D and eight centers have Prototype Manufacturing Workshop activities. Seventy-seven proven designs of farm implements for different unit operations were developed and are being promoted among small and marginal farmers. Department has already developed several improved animals drawn implements, jute related equipment with special emphasis on marginal farmer, small gadgets/tools especially suitable for small and marginal farmers and women friendly,

Department is conducting of entrepreneurship development programmes which lead to setting up of enterprises based on agricultural engineering technologies. Custom hiring of agricultural machinery as an enterprise is one such flagship programme. The programme, conducted in collaboration with Directorate of Agricultural Engineering, Govt. of Madhya Pradesh has helped in establishment of about 1000 custom hiring centers across Madhya Pradesh state. Setting up of these centers has multifaceted benefits, that entrepreneurs use these machines for own farms as well as earn annual income of about Rs. 3 to 4 lakhs, the small farmers get required machinery at required time at an affordable cost, with enhanced mechanization, productivity is increased and cost of production is reduced, employment for 2-3 persons is generated per custom hiring centre. Entrepreneurs are mandatorily trained prior to setting up of their custom hiring centers to entrepreneurs in running custom hiring centers professionally and profitably. Department continues subsequent technical advices and support to these entrepreneurs. Further, farmers of different states are continuously being trained on operation, adjustments and repair/ maintenance of farm machines. About 2500 farmers from different states of India have been trained during last two years.

Ministry of Agriculture & Farmers Welfare O.M No.7 (5)/2018, dated 29th May, 2018, Department of Agricultural Research and Education

DOUBLING FARMERS INCOME BY 2022 **RECOMMENDATION (PARA NO.12)**

The Committee note that the Government has 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 2022. The emphasis is on generating higher income for farmers. The Committee are aware of the fact that doubling of farmers income within time frame is a mammoth task and it would require concerted, coordinated and committed approach. The Department informed that it is actively participating with Government's national mission of doubling the farmers' income in collaboration with sister departments through technological, skill development, propagation of critical inputs and various service interventions to increase farm level production and productivity. In order to facilitate the farmers for enhanced income generation, DARE/ICAR has undertaken a number of steps. 1.65 lakh Soil Health Cards have been issued to the farmers, 4.69 lakh extension programmes have been organized, involving 198.67 lakh participants for creating awareness among farmers about all the efforts being made to improve the condition of rural India. A new initiative "Pandit Deen Dayal Upadhyay Unnat Krishi Shiksha Yojana" to train farmers in organic and sustainable farming has been launched. Krishi Vigyan Kendra (KVKs) play important role in frontline extension system in the country for technology assessment, demonstration and capacity building under different farming situations across the country and to realize Digital India vision in agriculture sector, the farmers now have access to web-based 'KVK Portal and KVK App,' mobile based 'Kisan Mobile Advisory –KMA' SMS portal, 'toll free help lines', ICAR data Centre and mobile apps for different commodities. Further during the course of evidence the Committee were informed that in addition to above, in order to further boost the efforts towards doubling farmers' income by 2022, the ICAR has also constituted the State Level Committees. The Vice-chancellor of one of the Agricultural Universities in the State is the Chairman and one of the Directors of ICAR Institutes /ATARIs, is the convener of the Committee. All the other Vice-Chancellors and the ICAR Directors, Director of ATARI of the concerned region, one nominee of DAC&FW, DAHDF, Ministry of Food Processing Industries and Ministry of Water Resources as well as the senior representatives of the concerned State Department of Agriculture are the members of the Committee. The Committee hope that these efforts will help the Government to a great extent in achieving these ambitious plan of doubling the farmers' income by 2022.

The Committee feel that technological advancement along with dissemination of knowledge would help in raising the income of farmers. It is a known fact that almost 85% of the farmers in the country are small and marginal farmers, who have small land holdings. And to raise the income of such farmers is a big challenge. The Committee recommend the Department to find ways for making agriculture

remunerative to these small and marginal farmers so that they can get more profit with lesser investment. The Committee also recommend the Department to help the farmers in increasing production, ensuring quality, providing sustainability through creating awareness about diversification of crops, new technology, integrated farming system and agro forestry etc.

REPLY OF THE GOVERNMENT

The recommendations regarding 'Doubling of Farmers' Income by 2022' have been laid out in the document focusing on technological advancements, information dissemination and extension led approaches to double the farmers' income by 2022. Department produced a Policy Paper on Strategy for Doubling Income of Farmers in India, which entails on various sources of income growth broadly under four categories viz. technology and cropping system related, post-harvest management and value addition; marketing and price related and non-farm income sources. Besides, the ICAR has undertaken a number of Sect oral and geographical case studies to facilitate designing of appropriate policies for enhancing the incomes.

ICAR conducted several programmes for making agriculture remunerative for small and marginal farmers for getting more profit with less investment. In this direction, ICAR organized National level program on 'Let's Listen to Farmers' by involving farmers from 24 states and received suggestions/feedback of the farmers for technology needs in their respective states/ecosystems. Also organized national programs for farmers for interaction, training and capacity building so that advantages of several national programmes of Government of India such as Soil Health programme, Fasal Bhima Yojana, Krishi Sinchayi Yojana, Climate adaptation, e-NAM, etc. can be harnessed by the farmers in improving productivity and profitability of agri-produce, thereby increasing the income.

Department through its network of 681 Krishi Vigyan Kendras ismaking all efforts to help the farmers by creating awareness through field demonstration and Kisan melas about diversification of crops, new technology, integrated farming system and agro forestry, and through supply of quality seed/ animals and planting materials. Advisories are also being provided to farmers in increasing production, ensuring quality and sustainability of resources. One of the successful farming system demonstrated in IARI as a show window to the farmers across the country, has been established for both irrigated and rain fed agro-ecosystems, which will be replicated in other Institutes also and it is being popularized among the farmers in different states.

In order to increase income of farmers engaged in horticulture crops and vegetables production, department conducted research on standardization of

Integrated Cropping/Farming System models to enhance the total system productivity and technologies such as coconut based multi-storey cropping system integrating spices, coffee, banana, pine apple etc. Coconut based cropping system, areca nut based cropping system, horti-silvi-pastoral system for semi-arid regions, integration of seed spices in fruit crops, integration of vegetables in seed spices were developed and successfully demonstrated.

The Department developed precision equipments for conservation agriculture and organized training programmes for the farmers, farm women, rural youths and other stakeholders to build capacity to increase production and productivity and improve quality. Various awareness programmes are also conducted to get those exposed to new technologies, crop rotation, diversification of crops, agro-forestry and integrated farming, so that their farming is sustainable and provide more income with lesser investment. Awareness among the farmers has been created on adoption of low cost protected cultivation technologies for quality nursery raising, off season production of leafy vegetables and educated on low cost micro irrigation systems for horticulture as well as field crops. Department is also promoting multi-crop and multi-unit operations, improved equipment and technologies for precise use of inputs with timeliness, processing and value addition of major crops in reducing postharvest losses, which will ultimately help the farmers to increase their farm output and income.

Ministry of Agriculture & Farmers Welfare O.M No.7 (5)/2018, dated 29th May, 2018, Department of Agricultural Research and Education

CHAPTER III

OBSERVATION/RECOMMENDATIONS WHICH THE COMMITTEE DO NOT DESIRE TO PURSUE IN VIEW OF THE GOVERNMENT'S ACTION TAKEN **REPLY**

MAINSTREAMING OF WOMEN IN AGRICULTURE **RECOMMENDATION (PARA NO.13)**

The Committee note that with the changing dynamics of agriculture in the country the role of women farmers will be the key to improve agriculture productivity. As has been highlighted in Economic Survey (2017-18) with growing rural to urban migration of men, there is feminization of agriculture sector with increasing number of women in multiple role as cultivators, entrepreneurs and laborers. However, the differential access of women to resources like land, credit, water, seeds and markets needs to be addressed. Towards this, Government has been implementing various schemes which will help improve the entitlements of women farmers and prove to be advantageous in bridging the existing policy gaps in the sector. The Committee have been apprised of the steps undertaken viz. training, skill development etc. by ICAR for empowering women in agriculture for their economic betterment and livelihood security. The Committee observe that ICAR-Central Institute for Women in Agriculture (ICAR-CIWA), a prime research institute, has the mandate of carrying out research exclusively on gender issues in agriculture. The Department informed the Committee that in view of the importance of development of women farmers, it has been made mandatory to have one Subject Matter Specialist of Home Science in every KVK who is responsible for coordinating and organizing different activities related to farm women including livestock rearing, processing & value addition of produces, drudgery reducing interventions, nutria-farming and their empowerment through entrepreneurship development, organic farming and sustainable farming and is a step towards food quality and safety. The Committee recommend that the Department should orient their research towards the specific needs of farm women. For this purpose user-friendly farm implements may be developed.

The Committee note that the Department has taken various initiatives like ARYA, Mera Gaon- Mera Gaurav, Pandit Deen Dayal Upadhyay Unnat Krishi Shiksha Yojana to increase interface between farmers and scientist. The ARYA project was implemented to empower the Youth in Rural Areas to take up various Agri-enterprises in Agriculture, allied and service sector for sustainable income and gainful employment. The project is running in 25 districts of 25 States through KVKs. With the target of 5000 youths, the project has been started. Under this initiative, a total of 3879 rural youth have been trained and 930 different enterprise units related

to agriculture and allied sector have been established benefitting 2467 rural youth in the selected districts. Mera Gaon- Mera Gaurav programme has been initiated to effectively promote direct interface of scientists of ICAR Institutes and State Agricultural Universities with the farmers to hasten the lab to land process. For this, a group of four scientists each is adopting 5 villages. The project is intended to connect with 25,000 villages. At present, agricultural scientists have started providing information on newer technologies to the farmers in 13,500 villages. Pt. Deen Dayal Upadhyay Unnat Krishi Shiksha Yojna scheme was started in 2016 with a budget of Rs.534.925 lakhs under Unnat Bharat Abhiyan. 100 training centers have been started under this scheme in various states. 150 trainings have been conducted by different centers and more than 4500 farmers were trained in Organic Farming/Natural Farming/Cow Based Economy etc. The scheme is envisaged to bring changes in rural economy, create awareness of environmental issues, eg. soil health, sustainability and productivity. It will help to rejuvenate the tradition of natural farming. The Committee recommend that under all these initiatives specific targets be fixed for training women farmers so that the benefit of these initiatives can also be reaped by them.

REPLY OF THE GOVERNMENT

Department is operating a Central Institute for Women in Agriculture (CIWA), Bhubaneswar, which is undertaking research on issues affecting women and improving the livelihood opportunities of women in agriculture. It is also focusing on participatory action research in different technology based thematic areas involving farm women to test suitability of farm technologies for them and suggest refinement. The institute is also working to catalyze and facilitate research and development institutions to bring farm women perspectives in their research and development programs. For gender mainstreaming and empowering women in agriculture, CIWA is implementing various research projects with mandates of i) Research on gender issues in agriculture and allied fields, ii) Gender-equitable agricultural policies/ programs and iii) gender-sensitive agricultural-sector responses, iv) Coordinate research on Home Science. Training and awareness programs such as Women centric ICTs, and Women Entrepreneurship Development and skill development for SHGs including farm women at adopted villages are being organized.

Another institute which is at the forefront to develop women friendly equipment and tools is Central Institute of Agricultural Engineering (CIAE), Bhopal along with a couple of All India Co-ordinated Research Projects on Farm Implements and Machinery and Ergonomics and Safety in Agriculture which are also involved in such Endeavour. More than 43 women friendly equipments/tools have recently been developed and efforts are being made to commercialize them to ensure their easy availability to the women farmers. The centers of these schemes are also working

towards making workplace of tractors, combines etc. women friendly so that woman workers can operate these equipments.

Ministry of Agriculture & Farmers Welfare O.M No.7 (5)/2018, dated 29th May, 2018, Department of Agricultural Research and Education

CHAPTER IV

OBSERVATIONS/RECOMMENDATIONS IN RESPECT OF WHICH ACTION TAKEN REPLIES OF THE GOVERNMENT HAVE NOT BEEN ACCEPTED BY THE COMMITTEE

NATIONAL AGRICULTURAL HIGHER EDUCATION PROJECT RECOMMENDATION (PARA NO. 10)

The Committee have been informed that a new programme National Agricultural Higher Education Project (NAHEP) has been launched. The objective of the Project is to support Participating Agricultural Universities and ICAR in providing more relevant and higher quality education to Agricultural University students. The challenges faced by AUs mirror those faced in general by higher education in India. The needs of the agricultural sector resonate with other sectors, i.e., highly trained workforce and relevant cutting-edge research. The current ICAR-Agricultural Universities (AU) System reform agenda requires global knowledge and international expertise to refine its approach and implementation. For this reason, ICAR has requested World Bank support as a knowledge adjunct to the proposed NAHEP. The Project supports the Country Partnership Strategy and addresses the three engagement areas of integration, transformation and inclusion. These engagement areas foresee increased agricultural productivity and support quality improvements of higher education to create a more skilled workforce that continuously improves the productivity of key sectors, including agriculture. The proposed Project is also a multi-Global Practice collaboration (Agriculture and Education) and is expected to support activities and results directly related to cross-cutting strategic areas of climate change, jobs and gender. The Committee have been informed that there was no separate allocation of fund during 2017-18 at BE/RE stage, however Rs 5.0 crore was marked from the Budget of Education division at BE Stage. So far the said amount has not been utilized. The Committee note that Rs. 7.89 crore has been provided for NAHEP for 2018-19 at BE stage. The Committee are not happy with the non-utilization of funds. The Committee advise the Department to be more prudent in future. The Committee are aware of the fact that ICAR through its institutes and rich human resource have immensely contributed to the growth and development of agriculture in the country but a lot remains to be done. The Committee hope that the project would contribute in strengthening and development of agricultural higher education in the country

REPLY OF THE GOVERNMENT

The NAHEP is at the preliminary stage of its operation. Efforts are being made to make program fully functional by creating the need based infrastructure and

manpower. Despite all the constraints, the project has made some headway by utilizing an allocation of Rs.28.001akhs during the current FY 2017-18 for taking up various activities under the project. All efforts will be made to ensure maximum utilization of allocation earmarked in the BE 2018-19 through strategic planning and participation of all stakeholders to ensure that the targets set for the year are fully achieved without any shortfall.

Comments of the Committee

For comments of the Committee please refer to Para No.1.22 of **Chapter - I** of this Report.

Ministry of Agriculture & Farmers Welfare O.M No.7 (5)/2018, dated 29th May, 2018, Department of Agricultural Research and Education

CHAPTER V

OBSERVATIONS/RECOMMENDATIONS IN RESPECT OF WHICH FINAL REPLIES OF THE GOVERNMENT ARE STILL AWAITED

AGRICULTURE EDUCATION

RECOMMENDATION (PARA NO. 9)

The Committee note that Agriculture Education Division of the Department strives for maintaining and upgrading quality, relevance and strengthening of higher agricultural education through partnership with 6 Agricultural Universities, ICAR Deemed-to-be-Universities, Central Agricultural University and Central Universities with Agriculture Faculty by providing support for student and faculty amenities and for holistic development of students. Quality assurance in higher agricultural education is pursued through Accreditation of agricultural universities, their constituent colleges and programmes.

The Committee note that Agriculture Education Division coordinates various activities related to education planning, human resource development and quality reforms. The Committee also note that out of total allocation i.e Rs. 694.66 crore during 2017-18 for agriculture education, the actual utilization was Rs. 211.14 crore till 31.12.17. The allocation for the Division during 2018-19 has been enhanced to Rs. 725. 13 crore as against proposed allocation of Rs. 731.22 crore by the Department. The Committee have been informed that under-utilization of funds has been mainly due to the approval of the SFC/EFCs of the schemes which have made mostly in the latter half of the financial year and CCEA note of the scheme is yet to be approved by the Government. Hence, funds allotted for non-recurring items (works and equipments) could not be utilized. As soon CCEA note is approved, efforts will be made to expend the remaining amount. While appreciating the enhancement in allocation for agriculture education, the Committee are of the considered view that the Department can justify its demand for additional resources only when it is able to first utilize the entire resources allocated to it. The Committee, therefore, recommend that the Department must make sincere efforts to utilize the allocated funds by way of meticulous planning, timely implementation and stricter monitoring of schemes/projects. As informed by DARE, four Institutes namely, Indian Agricultural Research Institute, Indian Veterinary Institute, National Dairy Research Institute (NDRI) and Central Institute of Fisheries Education under ICAR, have been bestowed with Deemed-to-be University status. The Committee also recommend the Department to make efforts for expansion of NDRI as to strengthen its R&D capacity along with up gradation of its institutes viz. NAARM, Hyderabad etc to Deemed-to-be University status. The Committee desire to be apprised of the outcome of report of

external independent committees constituted to review the utilization of grants in XII Plan.

REPLY OF THE GOVERNMENT

The recommendation of the Committee to make sincere efforts to utilize the allocated funds by way of meticulous planning, timely implementation and stricter monitoring of schemes/projects has been noted for compliance. Accordingly, ICAR made all efforts to utilize the budget allotted at the RE 2017-18 and was able to utilize about 92.12% of its allocation with strategic and meticulous planning towards the end of the FY 2017-18. As per the recommendation of the Committee, the funds utilization efficiency, planning and monitoring of schemes projects will be further accelerated at various levels.

The NAARM is the only unique institution in the National Agricultural Research and Education System (NARES) for providing capacity building, training programs and strategic planning for better implementation of policy decisions. Over the years, the mandate of NAARM has expanded tremendously including activities of approximately 75 state agri-related universities, off-campus training programs, PGDMA education programs and NAARM is the hub of entrepreneurship/agri-start up incubations. NAARM with its 62 faculty strength and world class infrastructure facilities conducts national level academic and education programs. Department is taking all necessary steps to strengthen the R&D capacity of NAARM.

Two external committees were constituted for review of ICAR and its outcome during 12th Plan. The first committee under the Chairmanship of Dr. T. Ramasami, constituted for External Peer Review has submitted its report and the recommendations are under examination. Another committee was constituted under the Chairmanship of Dr. Deepak Pental to review research and other outcomes of schemes. The committee has made deliberations and the 2nd meeting was convened on 3rd April, 2018. The committee is likely to submit the report shortly.

Ministry of Agriculture & Farmers Welfare O.M No.7 (5)/2018, dated 29th May, 2018, Department of Agricultural Research and Education

NEW DELHI;
03 August, 2018
11 Shravana,1940 (Saka)

HUKM DEO NARAYAN YADAV
Chairperson,
Standing Committee on Agriculture.

STANDING COMMITTEE ON AGRICULTURE
(2017-18)

MINUTES OF THE TWENTY SEVENTH SITTING OF THE COMMITTEE

The Committee sat on Tuesday, the 31st July, 2018 from 1500 hrs. to 1635 hrs. in the Committee Room "B", Ground Floor, Parliament House Annexe, New Delhi.

PRESENT

Shri Hukm Deo Narayan Yadav – Chairperson

MEMBERS

LOK SABHA

2. Shri Sanjay Dhotre
3. Prof. Ravindra Vishwanath Gaikwad
4. Shri Nalin Kumar Kateel
5. Smt. Rakha Nikhil Khadse
6. Md Badaruddoza Khan
7. Shri C. Mahendran
8. Dr. Tapas Mandal
9. Shri Nityanand Rai
10. Shri Mukesh Rajput
11. Shri Virendra Singh
12. Shri Dharmendra Yadav
13. Shri Jai Prakash Narayan Yadav

RAJYA SABHA

14. Shri Rajmani Patel
15. Shri Kailash Soni
16. Shri Harnath Singh Yadav

SECRETARIAT

1.	Shri D.S. Malha	–	Joint Secretary
2.	Shri Arun K. Kaushik	–	Director
3.	Smt. Juby Amar	–	Additional Director
4.	Shri Sumesh Kumar	–	Under Secretary

*2. XXXXX XXXXX XXXXX XXXXX
*3. XXXXX XXXXX XXXXX XXXXX

[THE WITNESSES WITHDREW]

4. Thereafter, the Committee took up for consideration the following draft Reports:

* (i) XXXXX XXXXX XXXXX XXXXX
* (ii) XXXXX XXXXX XXXXX XXXXX
* (iii) XXXXX XXXXX XXXXX XXXXX
* (iv) XXXXX XXXXX XXXXX XXXXX
* (v) XXXXX XXXXX XXXXX XXXXX

(vi) Draft Report on the Action Taken by the Government on the Observations/Recommendations contained in the 48th Report (16th Lok Sabha) of the Standing Committee on Agriculture (2017-18) on 'Demands for Grants (2018-19)' of the Ministry of Agriculture and Farmers Welfare (Department of Agricultural Research and Education).

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

*6. XXXXX XXXXX XXXXX
XXXXX

The Committee then adjourned.

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

*Matter not related to this Report.

APPENDIX - II

(Vide Para 4 of Introduction of the Report)

ANALYSIS OF ACTION TAKEN BY GOVERNMENT ON THE THIRTY EIGHTH REPORT OF STANDING COMMITTEE ON AGRICULTURE (16TH LOK SABHA)

(i)	Total number of Recommendations	13
(ii)	Recommendations/Observations which have been Accepted by the Government	
	Recommendation Nos.	1,2,3,4,5,6,7,8,9,11 and 12
	Total	11
	Percentage	84.6%
(iii)	Recommendations/Observations which the Committee Do not desire to pursue in view of the Government's replies	
	Recommendation Nos.	13
	Total	1
	Percentage	7.6%
(iv)	Recommendations/Observations in respect of which replies of the Government have not been accepted by the Committee	
	Recommendation No.	1
	Total	1
	Percentage	7.6%
(v)	Recommendations/Observations in respect of which Final replies of the Government are still awaited	
	Recommendation No.	9
	Total	1
	Percentage	7.6%