



**COMMITTEE ON AGRICULTURE
(2014-2015)**

SIXTEENTH LOK SABHA

MINISTRY OF AGRICULTURE
(DEPARTMENT OF AGRICULTURAL RESEARCH AND EDUCATION)

DEMANDS FOR GRANTS (2014-15)

**{Action Taken by the Government on the Observations/
Recommendations contained in the Second Report
of the Committee on Agriculture (2014-2015)}**

FIFTEENTH REPORT



LOK SABHA SECRETARIAT

NEW DELHI

August, 2015/Shravana, 1937 (Saka)

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Presented to Lok Sabha on: 11.08.2015

Laid on the Table of Rajya Sabha on: 11.08.2015



**LOK SABHA SECRETARIAT
NEW DELHI**

August, 2015/Shravana, 1937 (Saka)

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COMPOSITION OF THE COMMITTEE ON AGRICULTURE (2014-15)

Shri Hukm Deo Narayan Yadav - Chairperson

MEMBERS

LOK SABHA

2. Shri Sanganna Amarappa
3. Prof. Ravindra Vishwanath Gaikwad
4. Shri Nalin Kumar Kateel
5. Md. Badaruddoza Khan
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RAJYA SABHA

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28. Shri Rajpal Singh Saini
29. Shri Ram Nath Thakur
30. Shri Shankarbhai N. Vegad
31. Shri Darshan Singh Yadav

** Vice Shri Kadiyam Srihari who ceased to be the Member of the Committee on his resignation from Lok Sabha w.e.f 11.06.2015 vide Notification No. 21/1/2015/T(B) dated 15.06.2015*

(iii)

SECRETARIAT

- | | | | |
|----|--------------------|---|---------------------|
| 1. | Shri Abhijit Kumar | - | Joint Secretary |
| 2. | Shri N.K. Pandey | - | Director |
| 3. | Smt. Juby Amar | - | Additional Director |
| 4. | Shri Sumesh Kumar | - | Under Secretary |

INTRODUCTION

I, the Chairperson, Committee on Agriculture (2014-2015) having been authorized by the Committee to submit the Report on their behalf, present this Fifteenth Report on Action Taken by the Government on the Observations/ Recommendations contained in the Second Report of the Committee on Demands for Grants (2014-15) pertaining to Ministry of Agriculture (Department of Agricultural Research and Education).

2. The Second Report of the Committee on Agriculture (2014-2015) on 'Demands for Grants' (2014-15) pertaining to Ministry of Agriculture (Department of Agricultural Research and Education) was presented to Lok Sabha and laid on the Table of Rajya Sabha on 18 December, 2014. The Action Taken Replies on the Report were received on 12 March, 2015.

3. The Report was considered and adopted by the Committee at their Sitting held on 06 August, 2015.

4. An analysis of the Action Taken by the Government on the Observations/ Recommendations contained in the Second Report of the Committee is given in **Annexure**.

NEW DELHI;
07 August, 2015
16 Shravana, 1937 (Saka)

HUKM DEO NARAYAN YADAV
Chairperson,
Committee on Agriculture.

CHAPTER-I

REPORT

This Report of the Committee on Agriculture deals with the action taken by the Government on the Recommendations contained in the Second Report (Sixteenth Lok Sabha) of the Committee on Agriculture (2014-2015) on "Demands for Grants (2014-15) pertaining to Ministry of Agriculture (Department of Agricultural Research and Education) which was presented to Lok Sabha on 18.12.2014 and laid on the Table of Rajya Sabha on the same day.

1.2 The Ministry of Agriculture (Department of Agricultural Research & Education) have furnished Action Taken Replies in respect of all the 30 Observations/Recommendations contained in the Report. These have been categorized as under:

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

Recommendation Nos. 1, 2, 3, 5, 6, 8, 9, 10, 11, 12, 13, 14, 17, 18, 20, 21, 22, 23, 24, 25, 27, 28, 29 and 30

(Chapter- II)

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

Recommendation Nos. NIL

(Chapter- III)

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

Recommendation Nos. 7, 16, 19 and 26

(Chapter- IV)

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

Recommendation Para No . 4 and 15

(Chapter- V)

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 reasons for non-implementation. The Committee desire that further Action Taken Notes on the Observations / Recommendations contained in Chapter-I and final Action Taken Replies to the Recommendations 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.

IMPLEMENTATION OF INITIATIVES ANNOUNCED FOR XII PLAN

Recommendation (Serial No. 4)

1.5 The Committee had recommended as under:-

”The Committee are unhappy to note that many new initiatives such as Rural Entrepreneurship Awareness Development Yojana (READY), farmers First, Attracting & Retaining Youth in Agriculture(ARYA), establishment of Central Agricultural Universities at Bihar, Bundelkhand, and Barapani initiated for implementation during XII Plan are yet to commence nearly three years after the commencement of the Plan. The Committee have been informed that the pace of progress of these initiatives has been affected due to reduced allocations to the DARE. They have been informed that the proposal relating to some initiatives such as READY & ARYA are pending before the Ministry of Finance and CCEA respectively. The Committee have been assured that these proposals will be implemented soon after getting the approvals.

Similarly, formalities for establishment of CAU Bihar and Barapani have been initiated. The Committee deplore the slow pace of work in implementation of new initiatives during the XII Plan. The Committee are of the view that preliminary work for implementation of these schemes and the proposals for approval should have been completed well in time. The Committee desired that requisite formalities for launching these schemes/projects should be completed without further loss of time and it should be ensured that implementation is taken up during the current financial year so that intended benefits planned under these schemes are available in time."

1.6 The Department in their Action Taken Reply has stated as under:-

"The Rani Lakshmi Bai Central Agricultural University, Bundelkhand has started classes for the B.Sc. (Hons.) Agriculture course from the year 2014-15. The Memorandum of Understanding (MoU) has been signed between Government of Bihar and Union Government to convert Rajendra Agricultural University (RAU), Samastipur, Bihar to Central Agricultural University (CAU).

As far as Central Agriculture University (CAU), Barapani is concerned, two States i.e. Nagaland and Meghalaya are to be covered under this. This includes establishment of colleges in Meghalaya and Nagaland. The EFC of CAU, Imphal has been approved by the Union Government in which budget allocation for the colleges to be established in these states have been approved in the XII Plan. The Government of Meghalaya has been requested for acquiring the additional 20 acres of land, in contiguity to the 20 acres which has already been identified for the College of Post Graduate Studies, Umiam, under Central Agricultural University, Imphal. The preparation of the EFC of CAU, Barapani and the draft Bill for parliament is in process.

The new initiative such as Farmers FIRST is a part of the KVK Scheme and its Cabinet Note is under process. The project will be implemented as soon as it is approved by the Government. Student READY (Rural Entrepreneurship Awareness Development Yojana) is part of the scheme "Strengthening and Development of Higher Agricultural Education in India," and its cabinet note is under process. The scheme ARYA (Attracting & Retaining Youth in

Agriculture) has been approved in the XII plan EFC of 'National Agricultural Innovation Foundation' and the work has already started."

1.7 The Committee, while showing their displeasure over slow pace of implementation of new initiative such as Rural Entrepreneurship Awareness Development Yojana (READY), Farmers FIRST, Attracting & Retaining Youth in Agriculture (ARYA), establishment of Central Agricultural Universities at Bihar, Bundelkhand, and Barapani had desired the Department to ensure implementation of these initiatives during 2014-15 after completion of all requisite formalities. The Department in their Action Taken Reply apart from stating status of establishment of Central Agriculture Universities in Bihar, Bundelkhand and Barapani have informed that Cabinet Note for two Schemes namely Farmers FIRST and Student READY are under process and these will be implemented after approval by the Government. Regarding the ARYA Scheme, the Committee have been informed that work for Scheme ARYA has already been started under EFC of National Agriculture Innovation fund. The Committee while recognizing progress made towards implementation of new initiatives are disappointed with Programme planning capacity of the Department as they were not able to launch initiatives planned for XII plan even after more than three years. The Committee, therefore, desire the Department to bring professionalism in Planning division and enhance co-ordination with the State Governments so that pace of programme Planning as well as implementation may be improved for the betterment of farming community of the country.

REVENUE RECEIPT OF DARE/ICAR

Recommendations (Serial Nos. 07)

1.8 The Committee had recommended as under:-

"The Committee note that revenue generated by the institutes under ICAR are not reflected in Revenue Receipt presented to the Lok Sabha. They have been apprised that revenue generated from consultancy services and training are utilized as per approval given by the Ministry of Finance and that license

fee generated by the institutes is remitted to the ICAR as per ICAR Guidelines. The Committee are given to understand that all revenues received by the Government by way of taxes like Income Tax, Central Excise, Customs and other receipts flowing to the Government in connection with the conduct of Government business i.e. Non-Tax Revenues are credited into the Consolidated Fund constituted under Article 266 (1) of the Constitution of India. The Committee, therefore, find violation of this provision of the Constitution as any money deposited to the Consolidated Fund of India ought to have the approval of Parliament for incurring expenditure. They desire that such revenue generated under the administrative control of the Department should be reflected in the budget documents including detailed Demands for Grants. They would like DARE to clarify the issue and rectify the irregularity, if any, in this regard."

1.9 The Department in their Action Taken Reply has stated as under:-

The General Financial Rules GFR 2008(iii) states "All autonomous organizations, new or already in existence should be encouraged to maximize generation of internal resource and eventually attain self-sufficiency". ICAR, though a non-profit scientific organization, generates internal resources through the following:

1. Income from Sales of farm produce/ livestock
2. Income from Services
3. Fees/Subscriptions
4. Income from Royalty, Publications etc.

The Revenue generated by ICAR is netted while submitting the demand of funds to the Ministry of Finance and as such the Revenue generated by ICAR is utilized by ICAR itself. The utilization of internal resources as such is permitted by Secretary (Expenditure), Ministry of Finance vide D.E.A Id. No. F. 2(45)-B (CDN)/2010 dated 12/09/2011. The revenue generated by ICAR are not transferred to the Department viz., DARE and as such do not form a part of Non-Tax revenues of DARE.

(Reply to Recommendation Serial No. 07)

1.10 The Committee while observing non reflection of revenue generated from the Institutes under ICAR in revenue receipt presented to Lok Sabha, had opined that revenue generated under administrative control of the Department should be reflected in Budget Documents including detailed Demands for Grants and had desired the DARE to clarify the issue and rectify the irregularity, if any. The Department in their action taken reply while referring to permission by Secretary (Expenditure), Ministry of Finance Vide D.E.A Id. No. F. 2(45)-B (CDN)/2010 dated 12/09/2011 have stated that the revenue generated by ICAR is netted while submitting the demand of funds to the Ministry of Finance and as such the Revenue generated by ICAR is utilized by ICAR itself. They have further stated that revenue generated by ICAR are not transferred to the Department Viz., DARE and as such do not form a part of Non-Tax revenues of DARE. The Committee are not convinced with the reply of the Department regarding validity of approval of Ministry of Finance without approval by the Parliament. The Committee find this practice as violation of this provision of the Constitution as any money earned by the Government institutes ought to be deposited to the Consolidated Fund of India and therefore, require approval of Parliament for expenditure. The Committee, therefore, direct the Department to convey the serious concern of the Committee to the Ministry of Finance and to present a note on constitutional provisions regarding competence of the Government to allow use of commercial earnings of Government Departments without the approval and sanction of Parliament.

ACTION PLAN TO CONTROL ARSENIC CONTAMINATION OF GROUND WATER IN WEST BENGAL

Recommendation (Serial No. 14)

1.11 The Committee had recommended as under:-

"The Committee note that more than 3 crore people in 34,000 square km area in the State of West Bengal are prone to chronic arsenic toxicity due to contamination of

ground water and high build of arsenic in soil and thereby its subsequent accumulation in crops and vegetables. They have been apprised that ICAR has come up with some practical mitigation strategy such as sowing of low arsenic accumulating rice varieties, use of organic manure, provision for irrigation from deep tubewell, sowing of legume and pulses requiring reduced irrigation etc. to control the harmful effect of arsenic contamination. The Committee urge the Department/ICAR to take steps for widespread dissemination of these strategies to local population in affected areas. At the same time, there is urgent need for taking up this issue on priority basis and granting funds for the task as it directly affects the human and livestock health. The Committee, therefore, recommend the ICAR to prepare an action plan to mitigate the harmful effects of arsenic contamination in consultation with Department of Agriculture and Cooperation, Ministry of Health & Family Welfare, Ministry of Science & Technology, Ministry of Human Resource Development, Ministry of Environment & Forest and Government of West Bengal."

1.12 The Department in their Action Taken Reply has stated as under:-

"The ICAR will provide the required technological backstopping to the efforts being made by the different ministries including Ministry of Water Resources, River Development & Ganga Rejuvenation (WRRD&GR) and also help in the process of developing Coordinated Action Plan in this direction."

1.13 **keeping in view of hardship being faced by a large population in West Bengal due to chronic arsenic toxicity, the Committee had desired the Department to disseminate information regarding mitigation strategy as devised by ICAR scientist among local population and to prepare an action plan to mitigate the harmful effects of arsenic contamination in consultation with Department of Agriculture and Cooperation, Ministry of Health & Family Welfare, Ministry of Science & Technology, Ministry of Human Resource Development, Ministry of Environment & Forest and Government of West Bengal. The Department in their Action Taken Reply without enumerating steps taken in this regard have stated that they will provide the required technological backstopping to the efforts being made by the different**

ministries including Ministry of Water Resources, River Development & Ganga Rejuvenation (WRRD&GR) and also help in the process of developing Coordinated Action Plan in this direction. The Committee are not convinced with the lackadaisical approach of the Department to avoid preparation of action plan. the Committee are of opinion that preparation of a well researched action plan to mitigate harmful effects of Arsenic contamination will provide a clear road map to concerned Ministries, State Governments, and other stakeholders to take effective action to avoid hardship to local population. The Committee, therefore, reiterate to devise a Action Plan in this regard with proactive consultation with all stakeholders as the issue merits immediate attention.

NATIONAL ACTION PLAN TO CONTROL THE MENACE OF PARTHENIUM GRASS

Recommendation (Serial No. 15)

1.14 The Committee had recommended as under:-

"The Committee note that problem of unabated growth of 'Parthenium' in large parts of the Country is affecting availability of fodder for cattle, thereby directly affecting the health of livestock/cattle as also income of farmers. They note that mechanical, chemical and biological methods are available for management of growth of Parthenium grass. The Committee have been apprised that Directorate Of Weed Science Research (WSR) has developed a cheap technology for mass multiplication of a bio agent called 'zygogramma bicolorata' which helps to lower down the impact of Parthenium and the Weed Science Research has made efforts to spread awareness about practices to control spread of Parthenium. They have also been informed about need of large scale efforts on the analogy of 'Swachya Bharat Abhiyaan' to control the menace of Parthenium grass. The Committee, therefore, recommend to the Government to frame a concrete action plan to spread awareness about the technology on a country wide scale to control the unabated growth of Parthenium and other exotic weeds affecting availability of fodders to the cattle. The Committee, strongly, recommend the DARE to frame a co-

ordinated action plan in this regard in consultation with DAC and Ministry of Rural Development under intimation to the Committee of the outcome. The Committee also recommend that the Department should find out feasibility of using the method of spraying the salt water on Parthenium.

The Committee urge the Department to probe the possibility of relating and integrating this action plan to control Parthenium and the use of bio-agent to control on the road sides which are left unattended with 'Mahatma Gandhi National Rural Employment Guarantee Act' Schemes by involving the unemployed labour in using the technology for the same. They also emphasize that awareness should be enhanced for proper results."

1.15 The Department in their Action Taken reply has stated as under:-

"Efforts have been made at Directorate of Weed Research, Jabalpur (DWR) to manage *Parthenium* by mechanical and manual, cultural, chemical and biological management methods. Biological control of Parthenium through a leaf feeding bioagent *Zygogramma bicolorata* has been successful. As part of the integrated management approach, in the waste lands and on the sides of roads and railway tracks, replacement of Parthenium by competitive plants like *Cassia tora* and *C. sericea* has been recommended.

DWR probed the feasibility of spraying salt water on Parthenium for its control. Salt water (15-20%) kills small and succulent plants but the mature plants escape. Two to three salt spraying will be required in a year for complete control as Parthenium which has the ability to grow throughout the year, and it may also result in soil salinity problems. Therefore, instead of salt, herbicides in low dose will be more effective to manage Parthenium under integrated approach.

DWR has been observing 'Parthenium Awareness Week' involving State Agricultural Universities (SAUs), Krishi Vigyan Kendra (KVKs), ICAR institutes, and many NGOs, schools, colleges, etc. To facilitate successful implementation of the programme, DWR published posters, extension pamphlets and made

video films on Parthenium and distributed among the stakeholders in addition to publishing research and popular articles, bulletins and books on management of Parthenium. From 2014 onward, DWR is appealing to all KVKs, SAUS and ICAR institutions to make their campus Parthenium-free by adopting regular management practices.

Apart from this, as suggested by the Committee, the department has communicated the recommendation to create awareness about practices to control Parthenium to the Department of Agriculture and Cooperation to sensitize them on the menace of Parthenium as well as solicited their cooperation to help bring out an action plan. The Ministry of Rural Development (MoRD) also has been requested for required interventions under MGNREGA. Responses from these government agencies are awaited."

1.16 The Committee had recommended the Department to frame a co-ordinated action plan to control the menace of 'Parthenium' in consultation with DAC and Ministry of Rural Development which is affecting availability of fodder for cattle, thereby directly affecting the health of livestock/cattle as also income of farmers. The Committee had also recommended the Department to probe the possibility of relating and integrating this action plan to control Parthenium and the use of bio-agent to control on the road sides which are left unattended with 'Mahatma Gandhi National Rural Employment Guarantee Act' Schemes by involving the unemployed labour in using the technology for the same. The Committee had also recommended the the Department to find out feasibility of using the method of spraying the salt water on Parthenium. The Department in their action taken reply apart from stressing use of herbicides in low dose to manage Parthenium under integrated approach rather than spray of salt water as later will cause problem of salinity have enumerated the steps taken by Directorate of Weed Research to enhance awareness and to make KVKs, SAUS and ICAR institutions to make their campus Parthenium-free by adopting regular management practices. On the issue of preparation of action plan, the Department have stated that they are in touch with their counterparts in Department of Agriculture and

Co-operation to bring out action plan. They are also awaiting response of Department of Rural Development for required interventions under MGNREGA. The committee appreciate efforts made by the Department to control the menace of Parthenium. the Committee also desire the department to proactively pursue the Department of Rural Development for formulating a dedicated component to control the menace of Parthenium under MGNREGA schemes.

AVAILABILITY OF ADVANCE PRICE FORECAST OF AGRICULTURAL COMMODITY

Recommendation (Serial No. 16)

1.17 The Committee had recommended as under:-

"The Committee are of the opinion that availability of advance price forecast before sowing of crops could be very beneficial to the farmers in pre-sowing decision making and thereby enhancing farmers' income. The Committee note that ICAR is providing facility of price forecast for twenty agricultural commodity through network of 16 centres located throughout the country. The Committee note the efforts of ICAR in the important area of agricultural extension. However, the Committee are of view that there is need for bringing more crops especially the major crops region-wise under their purview in order to cover larger number of farmers in other parts of the country as well. The Committee, therefore, recommend the DARE to enhance the coverage of agricultural commodity along with number of centres providing price forecast for the benefit of farmers especially the small and marginal farmers in the pre sowing decision making."

1.18 The Department in their Action Taken reply has stated as under:-

In order to help farmers take judicious decision to market their farm produce ICAR's institute "National Institute of Agricultural Economics and Policy Research (NIAP)" started a Network project of Market Intelligence in June, 2013 to provide reliable and timely price forecasts to farmers on selected agricultural commodities. The project generates price forecasts for major

agricultural commodities in different parts of the country through the network of following Centres:-

SL. No.	Institute Name	Commodities Allotted
	Lead Centre: NIAP, New Delhi	
	Collaborating Centres	
1.	ANGRAU, Hyderabad	Chickpea, Groundnut, Maize, Cotton , Chillies
2.	BHU, Varanasi	Tomato, Potato, Mango, Maize, Rapeseed & mustard
3.	IABM Bikaner, Rajasthan	Cumin ,Chickpea, Pearmillet, Clusterbean, Coriander
4.	CPRI, Shimla	Potato
5.	GBPUA&T, Pantnagar	Potato, Fine Paddy, Tomato, Cabbage, Vegetable Pea
6.	ICARNEH, Barapani	Ginger, Turmeric, Potato, Pineapple, Tomato
7.	IIHR, Bangalore	Onion, Tomato, Mango, Pomegranate, Grapes
8.	IIPR, Kanpur	Chickpea, Pigeonpea, Lentil, Black Gram, Green Gram
9.	JAU, Gujarat	Castor, Pigeonpea, Potato, Cotton, Groundnut, Maize
10.	JNKVV, Madhya Pradesh	Soybean, Chickpea, Maize, Mustard, Tur
11.	KAU, Thrissur	Pepper, Tapioca, Coconut
12.	OUAT, Bhubaneswar	Coconut, Cotton, Turmeric, Maize, Greengram, Ginger, Groundnut
13.	PDKV, Akola	Green gram, Pigeonpea, Onion, Maize, Soybean
14.	UAS, Bengaluru	Maize, Banana, Ragi, Redgram, Potato
15.	YSPUHF, Solan	Apple, Tomato, Pea, Ginger, Maize
16.	SKUAST, Shalimar	Apple, Walnut, Cherry, Pear

The price forecasts are disseminated to the farmers before sowing and during harvests so that informed and intelligent decisions can be taken by the

farmers for acreage allocation and timing of sale of their produce. With NIAP, New Delhi, as lead Centre, the project is implemented at 16 locations with involvement of 12 State Agricultural Universities and 4 ICAR Institutes. Each centre is required to develop and disseminate pre-sowing and pre-harvest price forecasts of around five agricultural commodities selected based on the regional importance. Due care is taken to generate the dependable forecasts by using scientific techniques and also taking into consideration the farmers' and traders' perception into account. The price forecasts are disseminated to farmers using local newspaper, Television, IFFCO SMS Service, Farmers fair, special meetings with farmers, Institute Websites and display in mandis."

1.19 The Committee had recommended the Department to enhance the coverage of agricultural commodity bringing more crops along with number of centers providing advance price forecast for the benefit of farmers as availability of advance price forecast before sowing of crops could be very beneficial to the farmers in pre-sowing decision making and thereby enhancing farmers' income. The Department in their action taken reply have submitted already known information about 'Network project of Market Intelligence' being undertaken by the National Institute of Agricultural Economics and Policy Research (NIAP) and have not made any efforts to enhance coverage of agricultural products and number of centers to make information regarding price forecast to farmers in wider areas than existing regions covered. The Committee, therefore, once again reiterate their earlier recommendation to enhance coverage of crops and number of centers in order make this information available for the benefit of large numbers of farmers.

FIXATION OF PRICES OF SEEDS DEVELOPED BY ICAR

Recommendation (Serial No. 19)

1.20 The Committee had recommended as under:-

"The Committee note that DARE alongwith other stakeholders is involved in fixing prices for Breeder Seed and Sale Rate is fixed keeping in view the production cost and considering the interest of the farming community. They have further been informed that price of foundation and certified seed is decided by respective seed producing public agencies like NSC and respective State seed corporations, private seed companies as per the prevailing market rates and cost of production. The Committee are of view that adequate availability of seeds of good quality at reasonable price to farmers is of utmost significance for enhancing production and productivity of farm produce. Further, outcome of R&D work with public money should be available at reasonable prices to the intended beneficiaries. They find the current practice of leaving fixation of final prices of seed varieties to the private sector works, at times, against the interest of the farmers. The Committee recommend that ICAR should develop a seed bank where all varieties of seeds are available to the farmers, that is traditional seeds, newly researched seeds, hybrid seeds etc. R&D for upgraded traditional seeds with quality improvements and increased productivity should be developed by ICAR proactively. They also recommend the DARE to devise a policy for fixation of final reasonable prices of seed varieties developed by ICAR at the time of transfer of technology which are fair and within the reach of majority of small and marginal farmers in the country. Seed varieties developed by ICAR should be sold with such preconditioned appropriate clause that the farmers receive them at reasonable price. Adequate monitoring mechanism should be put in place for the purpose."

1.21 The Department in their Action Taken reply has stated as under:-

"Mandate of ICAR is to produce nucleus and breeder seed. Crop Science Division of ICAR coordinates the breeder seed production of field crops in the

country with the cooperation of various SAUs and crop based institutes. The breeder seed is produced on the basis of indents received from private as well as public sector organizations placed with DAC which in turn consolidates the indents and forward to ICAR. The production of breeder seed is demand driven. Production of quality seed (foundation and certified) of various crops is primarily the responsibility of the States although ICAR institutes also produce limited quantity of certified/Truthfully Labelled (TL) seeds as they are mandated basically to carry out research and development activities. However, all possibilities will be explored to utilize the States and Central machinery including KVK to maximizing seeds/quality planting material production. Each institute fixes the price of seed keeping in view the prevailing market price, cost of production and interest of farmers."

1.22 In order to make available quality seed to farmers at reasonable price, the Committee had recommended the Department to devise a policy for fixation of final reasonable prices of seed varieties developed by ICAR at the time of transfer of technology which are fair and within the reach of majority of small and marginal farmers in the country as these research are funded with public money. The Department in their action taken replies apart from submitting already known information regarding mandate of ICAR to produce nucleus and breeder seed as per indents received from DAC have stated that Each institute fixes the price of seed keeping in view the prevailing market price, cost of production and interest of farmers. The Committee are of view that intellectual property rights related to seeds developed by the ICAR institutes are exclusive property of Government of India and it can put reasonable restriction /clause on final price after taking factors of input cost incurred during production and marketing of certified seeds. The Committee, therefore, do not find merit in the claim of the Department that price of seed fixed by ICAR institutes based on the prevailing market price and cost of production are in interest of farmers as many cases of excessive pricing of seeds have been reported in media and other platform. The Committee, therefore once again reiterate their earlier recommendation to incorporate a

clause about reasonable pricing whenever ICAR institutes transfer technologies and related information related to seeds to any public/private seed companies.

OPENING OF ADDITIONAL KVKs

Recommendation (Serial No. 26)

1.23 The Committee had recommended as under:-

"The Committee has been informed that there is a provision of opening one KVK in each of the rural district of the country. However, in larger districts composite index ranking based on three parameters with equal weightage for ranking the districts, viz. Geographical Area, Rural Population and Net Sown Area, one additional KVK is sanctioned. The Committee note that ICAR has been able to establish only 641 KVKs in the country as on date. They also note that only 45 Districts in 10 States of the country has been able to get an additional KVKs. The Committee are of view that the provision for setting of one KVK in each rural district of the country is insufficient keeping in view large areas, number of farmers and diverse agro-climatic regions of the country. The Committee are of view that in order to disseminate information about the research, refinement of technology/products and its demonstration to maximum numbers of small and marginal farmers DARE should aim for establishment of one KVK in each rural Block of the country. Only with this level of spread, the farmers of the country would be able to receive necessary information and agricultural input necessary for making agriculture a productive profession with suitable return on their investment. The Committee, therefore, recommend the DARE to devise ways and means for establishment of one KVK in each Block of the country. They also emphasize that Department should promote training from successful farmers to other farmers i.e. farmer to farmer training as well as training 'the trainer' for far and wide reach and coverage of knowledge i.e. covering and training 67 lakh farmers."

1.24 The Department in their Action Taken reply have stated as under:-

"As Agricultural Extension is the State Subject, therefore, large scale disseminations of technologies to farmers is the responsibility of State Governments, which are operating the main extension machinery. However, the KVKs are supplementing and complementing the efforts of the State Governments by taking up the role of front line extension and providing technological back stopping to the field extension system.

As observed by the Committee, so far the Government has approved for sanctioning one KVK in each of the rural districts in the country and one additional KVK in 50 selected larger districts out of which 45 KVKs have been sanctioned. Besides, proposal has been made for approval of the Government for one additional KVK in such more 55 larger districts and 5 hilly and mountainous districts in the country during the XII Plan

As far as setting up of KVKs in each block of the country is concerned, it is stated that KVK System is an effective outreach arm of National Agricultural Research System mandated to assess and demonstrate agricultural technologies, capacity development and work as knowledge and resource centre in the district. A number of expert Committees have recommended that KVKs should work as a link between research and different development departments for fostering the technology transfer process from lab to land and work as an umbrella for all agriculture and related schemes at district level for technological backstopping. The KVK is perfectly located at district level to lead, incubate local innovations and capacity development. Setting up of KVKs at block level may lead to its involvement in non- scientific development works. KVKs are developing the capacity of Subject Matter Specialists/ members of Block Technology Teams and Farmers Friends who are involved in field extension under ATMA scheme."

1.25 Keeping in view the criticality of agriculture extension services for the benefit of farmers and to make agriculture productive, the Committee had

recommended the Department to devise ways and means for establishment of one KVK in each Block of the country. They had also emphasized the Department to promote training from successful farmers to other farmers i.e. farmer to farmer training as well as training 'the trainer' for wider reach and coverage and training 67 lakh farmers. The Department in their Action Taken reply has stated that KVKs are only supplementing and complementing the efforts of the State Governments by taking up the role of front line extension and providing technological back stopping to the field extension system as Agriculture being a State subject, main responsibility of agriculture extension lies with the State Governments. they further stated that KVK is perfectly located at district level to lead, incubate local innovations and capacity development and setting up of KVKs at block level may lead to its involvement in non- scientific development works. On the issue of farmers to farmers training, the Department submitted that KVKs are developing the capacity of Subject Matter Specialists/ members of Block Technology Teams and Farmers Friends who are involved in field extension under ATMA scheme. The Committee are of view that availability of qualitative and timely inputs on agriculture has the capacity to transform the Indian agriculture apart from enhancing income of majority of small and marginal farmers. In this regard, KVKs are much better placed for the work of frontline agriculture extension services due to their linkage with ICAR institutes. At the same time, there is urgent need to increase the number of KVKs in view of diverse agro-climatic regions and number of farmers in the country. The Committee, therefore, once again reiterate their recommendation regarding establishment of KVKs at the Block level.

CHAPTER - II

OBSERVATIONS/RECOMMENDATIONS THAT HAVE BEEN ACCEPTED BY THE GOVERNMENT

Recommendation (Serial No. 1)

The Committee take note that the Rule 331G of the Rules of Procedure and Conduct of Business in Lok Sabha relating to examination of Demands for Grants by the Departmentally Related Standing Committees (DRSCs) was suspended by Hon'ble Speaker, Lok Sabha to enable the House to pass the Demands for Grants for the year 2009-10 during the Second Session of Sixteenth Lok Sabha without the same being referred to the concerned DRSCs. The Demands were, however, referred to the Standing Committees for examining the same after their constitution and for presenting the Report to the House therein. The Committee, after their constitution on 1st September, 2014 took up examination of the Demands for Grants pertaining to the Ministry of Agriculture for the year 2014-15. Since the Budget for the year 2014-15 has already been passed by the Parliament, the Committee endorse the same. The Committee would however, like the Ministry to take note of their recommendation while implementing various programmes/schemes, etc. within the approved budget.

REPLY OF THE GOVERNMENT

Noted for Compliance.

Ministry of Agriculture O.M. No. 7(6)/2014, dated 12th March, 2015, Department of Agricultural Research and Education

AVAILABILITY OF FUNDS TO THE DARE

Recommendation (Serial No. 2)

The DARE/ICAR has been entrusted with the onerous responsibility of spearheading the Research & Development in Agriculture and allied sectors

including education and extension activities. Research & Development, agricultural innovations and diffusion of new technologies are significant so as to meet the country's quest for food & nutritional security while enhancing the income & employment. However, the Committee note that ICAR has not been provided adequate funds as per outlays approved for XII Plan. The Committee note that during first three years, the ICAR has been provided only 40.5 % of funds of approved outlays of `25553 crore. The Committee are not satisfied with the reasons that allocations to DARE has been reduced keeping in view the total available resources in the country and demands of various other Ministries/sectors like infrastructure for education, health, sanitation etc. The Committee are apprised that every rupee invested in Agriculture Sector would fetch a return of `13.5. The Committee are of the view that Research & Development for agriculture and allied sectors should be accorded utmost priority with adequate funds. This is necessary for development of expertise necessary for making Indian agriculture ready to face challenges associated with increasing population, changing trends in consumption, deteriorating soil health, depleting resources, state of small & marginal farmers and climate change. The Committee, therefore, urge the Ministry of Finance and Planning Commission to enhance allocation to the Department/ICAR matching the original outlay in the remaining years of XII plan to meet the aforesaid challenges facing the Agriculture Sector.

REPLY OF THE GOVERNMENT

The Department had forwarded this recommendation of the Committee to the Ministry of Finance & Planning Commission (now NITI Aayog) and requested to provide the left over amount out of the total XII Five Year Plan allocation during the next two financial years (2015-16 & 2016-17). Whereas the Budget Division of Department of Economic Affairs, Ministry of Finance has stated that the Plan allocation for the year 2015-16 will be made keeping in view the availability of resources and other relevant factors. They further stated that the recommendation made by the Committee would be taken into consideration while allocating funds for the year 2015-16.

Recommendation (Serial No. 3)

The Committee note that Agriculture in India accounts for over 14% GDP and 12% of country's exports providing employment to over 50% of the work force. The Committee find that 50% of the workforce of the country contributes only 14% in the GDP of the country. In order to improve agricultural productivity, the Committee in their earlier reports have time and again stressed emphatically about the need for earmarking fund to the tune of at least 1% of agriculture GDP for R&D in agriculture. However, the Government is yet to take effective steps in that direction. The Committee are apprised that wherever there has been growth in Agricultural Research, Agricultural Education or Agricultural Growth in the world, there at least 2% of their total GDP. The Committee note that allocation during the first three years to the DARE/ICAR were only 0.59 % of total allocation of Plan Budget as against approved outlay of 0.70 % for XII Plan. The Committee are of the considered view that as already stated curtailment in allocation for the R&D work in agriculture will adversely affect the preparedness of the country to face challenges posed by the phenomenon of climate change and may jeopardise food security of the country. The Committee, therefore, strongly recommend that the Department should approach the Planning Commission & Ministry of Finance to enhance the share of DARE to at least 1% of GDP keeping in view the significance of R&D in Agriculture Sector particularly in relation to sustainable economic development and export earnings of the country.

REPLY OF THE GOVERNMENT

The Department had forwarded this recommendation of the Committee to the Ministry of Finance and Planning Commission (now NITI Aayog) for allocating at least 1% of Agriculture GDP as Plan Budget. Whereas the Budget Division of Department of Economic Affairs, Ministry of Finance has stated that the Plan allocation for the year 2015-16 will be made keeping in view the availability of resources and other relevant factors. They further stated that the recommendation

made by the Committee would be taken into consideration while allocating funds for the year 2015-16.

Ministry of Agriculture O.M. No. 7(6)/2014, dated 12th March, 2015, Department of Agricultural Research and Education

SEPARATE FUNDS FOR SCHEMES/INITIATIVES ANNOUNCED IN BUDGET SPEECH

Recommendation (Serial No. 5)

The Committee note that no separate grants were provided to DARE for implementation of schemes announced in Budget speech during 2012-13 and 2013-14. They also observe that ₹100 crore which were provided by the Planning Commission to DARE in 2014-15 for establishment of Fund for Climate Change were diverted to the Deptt. Of Agriculture & co-operation and the Ministry of Environment and Forests (MoEF) by the Ministry of Finance. The Committee have been informed that the Ministry of Finance has again sent a clarification on 29th September, 2014 that this budget para belongs to both the Ministries i.e; MoEF and DARE. The Committee are concerned with the state of affairs. They wonder why this confusion about demarcation has arisen. Now that the position has been clarified by the Ministry of Finance, there should be no delay in establishment of the fund and its fruitful utilization. The Committee would like to be apprised of the progress and achievement in this regard.

REPLY OF THE GOVERNMENT

Ministry of Finance has recently clarified through a communication that the fund of Rs. 100 crore has been diverted to Ministry of Environment & Forests (MoEF); hence, further action will be taken by MoEF.

Ministry of Agriculture O.M. No. 7(6)/2014, dated 12th March, 2015, Department of Agricultural Research and Education

REVENUE RECEIPT OF DARE/ICAR

Recommendation (Serial No. 6)

The Committee note that ICAR has its own internal source of revenue such as income from sale of farm produce/livestock, consultancy services, training, Fee/subscriptions, royalty, publications etc. They have been informed that ICAR has generated revenue of `50.69 crore and `53.06 crore during 2012-13 and 2013-14 respectively. In addition to this, revenue of `5.61 crore and `4.65 crore were generated from consultancy services undertaken during 2012-13 and 2013-14 and `9.64 crore generated from Business Process Development Units of various ICAR institutes as technology license fee during 2011-12 to 2013-14. The Committee have also been informed that overall target for revenue generation has been increased to `109.60 crore for 2014-15 vis-à-vis `53.06 crore achieved during 2013-14. They are of the view that ICAR with its huge scientific manpower and available knowledge base in terms of Intellectual Property Rights (IPRs) has tremendous potential for enhanced revenue generation. They recommend that ICAR while encouraging their scientists to create knowledge base regarding innovative seeds varieties, agricultural implements etc. which can cater to the domestic demand as well as for global application, should market their products/knowledge/research in international market so that revenue generation may be enhanced many folds. The Committee desire ICAR to take steps to tap business opportunities available in domestic & global markets.

REPLY OF THE GOVERNMENT

Indian Council of Agricultural Research (ICAR) is making all out efforts to commercialize the technologies developed by the Institutes. Each institute under ICAR has Institute Technology Management Unit for business planning and development. These units have the responsibility for scouting the potential stakeholders for the use of developed technologies and their licensing on mutually agreed terms and conditions under the overall extant guidelines of the Council. The potential of ICAR's huge scientific manpower and available knowledge base in terms of intellectual property rights and revenue generation is dependent upon the nature of IPR laws and the provisions included in these laws and other related policies.

Accordingly, the ICAR has taken steps and developed its two guidelines for revenue generation. These are: (i) ICAR Guidelines on Intellectual Property Management & Technology Transfer/ Commercialization and (ii) ICAR Rules and Guidelines for Professional Service Functions (Training, Consultancy, Contract Research and Contract Service). Further, DARE/ICAR has established a public limited for-profit company, namely, AgrInnovate India Ltd for commercialization of Technologies and services. Some of the Institutes of the Council like IIHR and CPRI are commercializing & earning significant revenue through sale of hybrids/varieties of our technologies such as Micronutrients pheromones PHT products Engineering machines and Bio pesticide consultancy developed by the institutes. Several other institutes like DRMR, Bharatpur; CRRI, Cuttack; DSR, Indore; DRR and DSR, Hyderabad licensed their varieties/hybrids to many private seed producing companies on the basis of fee and royalty.

The Council as per their mandates are generating revenue through sale of farm -produce and products; training, consultancy and testing fees; commercialization of technologies and other sources like entry fee in aquarium etc. Various institutes initiated action to generate revenue from, Testing, Training, Consultancy and Technology commercialization including royalty. It is planned to utilize the pilot plant facilities available with the institutes as well as technology transfer to augment the resource generation. Furthermore, skilled manpower available at various institutes are being focussed to serve the industry and other stakeholders to increase revenue generation of the institute. The institutes are being advised to take steps to tap business opportunities available in domestic and global markets.

Ministry of Agriculture O.M. No. 7(6)/2014, dated 12th March, 2015, Department of Agricultural Research and Education

CHALLENGES BEFORE INDIAN FARMING DUE TO CLIMATE CHANGE

Recommendation (Serial No. 8)

The Committee have been informed that predictions made by ICAR using indigenous simulation models have shown that climate change is likely to reduce

wheat fields by 6 to 17% by 2020 (2011-2040), 13-29% in 2050, (2041-2070) and 15-25% in 2080 (2071-2100). They note that mega project National Initiative for Climate Resilient Agriculture (NICRA) has been instituted in 2011 to enhance resilience of Indian agriculture to climate change and climate variability through Strategic Research, Technology Demonstration, Capacity Building and Sponsored/Competitive Grant Projects. The Committee have been apprised that 130 model villages have been established in climate vulnerable 130 districts under this project and several climate resilient interventions like water harvesting, direct seeded rice, system of rice intensification, alternate wetting and drying, green manuring, deep placement of fertilizers and feed supplements for livestock have been demonstrated on farmers' fields with a target of expanding these practices horizontally to other districts. The Committee note that zero tillage in wheat, summer in rice wheat system, green and brown manuring, mulching, protected cultivation of vegetables, drip irrigation, bio-fertilizers, raised bed planting are being promoted through capacity building interventions and technological back stopping with demonstrations under satellite village programme. However, the Committee have been informed that some other activities planned to address impact of impending climate change were affected due to reduced fund allocation and subsequent cut at RE stage. They are of view that R&D for development of new crop varieties and practical strategies including introducing relevant technology through satellite village programme are going to be corner stone of resilience in agriculture to face challenges associated with climate change. They are of the opinion that proactive steps taken in this direction will help the country to lead the world in the scientific innovations. The Committee, therefore, recommend the Government to allocate adequate funds so that Planned R&D in the area of preparedness for facing challenges that climate change will pose to Indian agriculture are not hampered. They also recommend that experiments in the 130 model districts be carried out in time and after assessing the results of these experiments it could be extended to other climate vulnerable districts in India. They also emphasize that in order to manage impact of climate change and enhance farmers' income, relevant technology of IARI be introduced through satellite village programme on wider scale. This would bring awareness with multiplier effect as these villages work as light

house of IARI technologies even in the neighbouring areas. Further, every KVK may adopt a model village within their jurisdiction, where the climate resilient technology could be experimented.

REPLY OF THE GOVERNMENT

The Department through its various centres of NICRA including multi-disciplinary Centre for Environment Science and Climate Resilient Agriculture (CESCRA) of IARI is already addressing issues related to climate change under strategic research component to showcase climate resilient technologies in adopted villages with a special emphasis on rainfed and small-scale farmers.

As many as 100 KVKs have adopted a model village for demonstration of climate resilient technologies in their respective districts. So far, 132 villages across the country have been covered by demonstrating integrated packages of available and proven technologies for adaptation and mitigation under climate variability. The activities will be expanded in some more districts during XII plan.

ICAR is preparing a roadmap to face challenges that climate change has posed to Indian agriculture through studies on climate change, its impact on agriculture, rising temperature, damage due to extensive precipitation and spread of viral diseases through vectors. The institutes are focusing on developing heat tolerant varieties, use of root stocks for mitigating flood, nature specific and nature generic breeding for management of biotic and abiotic stress.

Further vast germplasm is being evaluated for frost resistance in subtropical fruits and vegetables. Efforts are being initiated to integrate agro forestry with horticulture to mitigate the impact of climate change especially in east coast where cyclone is a threat.

Ministry of Agriculture O.M. No. 7(6)/2014, dated 12th March, 2015, Department of Agricultural Research and Education

IMPLEMENTATION OF DISTRICT CONTINGENCY PLAN

Recommendation (Serial No. 9)

The Committee note that farmers are increasingly facing problems of loss of crops and livelihood due to fluctuation in weather condition such as drought and heat stress caused by the factors associated with climate change. They note that District level vulnerability atlas was prepared by ICAR to develop and target appropriate adaptation measures to regions that are more vulnerable and affected by climate change. They were also apprised that District contingency plan developed by the ICAR in coordination with the State Government were implemented in current year and has been found very useful. The Committee are of that view that preparation of District Contingency plan was a long pending requirement and it will go a long way in solving problems faced by the farmers in the country. However, the ICAR should further improve the contingency plans on the basis of feedback received during implementation. The Committee, therefore, recommend the DARE to further fine-tune District Contingency Plans in keeping the difficulties/suggestions during the implementation of this plan. The Committee also recommend the Department to start awareness campaign to educate farmers about contingency plan through print and electronic media as well as through network of KVKs. Further, they desire that Agritech and Agri Business firms be also involved in the process.

REPLY OF THE GOVERNMENT

The Department has prepared Contingency Plans for 580 districts vulnerable to climatic aberrations covering 25 states. Based on this, interface meetings with different State departments namely Karnataka, Andhra Pradesh, Maharashtra, Gujarat, Rajasthan and Bihar were organised to operationalize these plans. Efforts are being made to refine these Contingency Plans based on the interactions with respective state agriculture department, Department of Agriculture and Cooperation (DAC), State Agriculture Universities (SAUs) and other stakeholders from time to time. Uploading of contingency plan is assigned to Directorate of Knowledge Management in Agriculture (DKMA) and is being done regularly. As advised by the

Committee, the necessary improvement based on the feedback received from various corners will be incorporated by ICAR-CRIDA Hyderabad. The awareness campaign to educate farmers will be done through social media, websites and print media. The ICAR Institutes are also told to incorporate contingency plan in their newsletter and other publications.

Apart from this, all the KVKs are involved in creating awareness about contingency plan to educate farmers on improved agricultural technologies through various extension programmes including print and electronic media. During the current year, the KVKs organized 1.33 lakh extension programmes through electronic and print media to have wider coverage in the districts. These included electronic media in the form of TV programmes, radio talks, CDs/DVDs, extension literature, newspaper coverage, popular articles, leaflets, folders and books/booklets.

Ministry of Agriculture O.M. No. 7(6)/2014, dated 12th March, 2015, Department of Agricultural Research and Education

PREVENTION OF SOIL EROSION

Recommendation (Serial No. 10)

The Committee are aware that soil erosion due to natural reasons, urbanisation and industrialization directly affects the crops as the fertile upper layer of the soil is eroded. Degradation of soil especially soil erosion is major challenge being faced by the farmers and planners in the country. They note that large part of Punjab is affected from the problem of soil erosion. They have noted that Government of Punjab is addressing the problem of erosion in the state through integrated watershed management programmes. The Committee have also been informed that State Government and Department of Land Resources, Government of India is implementing 6 IWMP projects for 17 Micro watershed projects in affected areas. They are of view that there is need to spread vital information relating to good agricultural practices and involvement of farmers in order to reclaim the degraded land. They are of the opinion that there is urgent need of preparation of soil erosion map at larger scale covering entire country in order to assess the enormity of problem and devise suitable action plan in the affected areas. The

Committee, therefore, recommend the DARE to prepare soil erosion map of entire country at 1:250,000 scale and devise location specific plan to control the problem of soil erosion. The KVKs should also be instructed to spread the information about good farming practices in the country in order to educate farmers on soil erosion and soil degradation.

REPLY OF THE GOVERNMENT

The ICAR- National Bureau of Soil Survey & Land Use Planning, Nagpur in collaboration with ICAR- Indian Institute of Soil & Water Conservation, Dehradun (IISWC) and ICAR- Central Arid Zone Research Institute, Jodhpur has developed soil erosion map of entire country at 1:2, 50,000 scale. As per the latest estimates (NAAS, 2010) based on harmonized database, the cultivable area affected by soil erosion is 92.39 million ha excluding the area eroded under open forest. ICAR-IISWC also conducts regular training courses on these aspects to educate farmers, state functionaries and KVKs in the areas of soil degradation, soil water conservation and watershed management.

The KVKs are providing the available expertise and technical backup to the programmes on soil erosion and soil degradation taken up by State Government agencies, besides taking up need based technical interventions under their mandated activities. Moreover, as suggested by the Committee, all the KVKs have been advised to spread the information about good farming practices in the country in order to educate farmers on soil erosion and soil degradation.

Ministry of Agriculture O.M. No. 7(6)/2014, dated 12th March, 2015, Department of Agricultural Research and Education

ESTABLISHMENT OF SOIL TESTING LABS

Recommendation (Serial No. 11)

Availability of information regarding soil quality is necessary input so that farmers are able to take decision on type of crops to be grown and type and quantity

of fertilizer to be used. The Committee note that 390 soil testing labs have been established at Krishi Vigyan Kendra and there is plan for establishment of 150 soil testing labs during XII plan. They have also been apprised about problems being faced by KVKs to analyse large volumes of soil. The Committee are of view that existing soil testing labs and those planned for are inadequate in both numbers & facilities to cater to the needs of farmers in large part of the country. In keeping with the vast coverage required besides conducting tests at regular intervals, there is need to promote private participation for establishment of soil testing lab. The Committee, therefore, recommend the DARE to make efforts in consultation with Department of Agriculture and Co-operation and State Governments for establishment of soil testing labs at Panchayat level. The Committee also advise the Department to involve private sector in establishment of soil testing labs & deploy local educated youths including Agro Business and Agritech firms in order to enhance the penetration of these labs to every nook and corner of the country.

REPLY OF THE GOVERNMENT

In order to improve soil health and fertility, the Department of Agriculture & Cooperation (DAC), Ministry of Agriculture under the component of soil health management of National Mission for Sustainable Agriculture (NMSA) is promoting soil test based balanced and integrated nutrient management encompassing judicious use of chemical fertilizers in conjunction with organic manures and biofertilizers in the country. Assistance for establishing as well strengthening soil testing laboratories in the country is also being provided. Recently, a National Mission on Soil Health Card has been launched to provide soil test based fertilizer recommendation to all the farmers in the country, involving different stakeholders including private sector and local educated youth.

Ministry of Agriculture O.M. No. 7(6)/2014, dated 12th March, 2015, Department of Agricultural Research and Education

PROMOTION OF DIGITAL SOIL TEST FERTILIZER RECOMMENDATION METER (STFRM) DEVELOPED BY IARI

Recommendation (Serial No. 12)

The Committee are aware that unbalanced and indiscriminate use of chemicals/plant nutrients over the years has resulted in depletion soil fertility and multi nutrient deficiency especially the soil under intensive cropping. The rampant use of fertilizers has not only affected the soil health but also had led in the escalation in the cost of cultivation. They feel that this is mainly due to the ignorance on the part of the farmers about the quality of soil vis-à-vis the crop to be sown. The Committee find that ICAR has developed a Digital Soil Test Fertilizer Recommendation Meter (STFRM) and a programmable low cost digital equipment that brings soil testing at farmer's doorsteps. They were apprised that this equipment can quantitatively estimate 5 soil parameters namely PH, EC, Organic Carbon Available P and Available K and prescribe fertilizer recommended on the basis of targeted yield approach. During study visit to IARI, Delhi, the Committee have been informed about low cost soil testing machine developed by IARI. The Committee are of the opinion that use of this technology is best suited for use by small and marginal farmers through the village panchayats for on the spot soil testing besides giving an opportunity of employment to rural local youth. They however, find that this technological adaptation is still at the laboratory level. The Committee recommend that the STFR meter for soil testing based fertilizer recommendation should be widely used through the panchayats for on the spot soil testing and the recommendation for balanced and integrated use of fertilizer. They however, caution the Department that Companies may escalate the prices of these Meters at the time of large scale commercial production and marketing of the meters to the farmers. They, therefore, recommend that the Department should incorporate a binding clause at the time of transfer of technology for commercial production against hike in the price of the 'Meters for soil testing on the spot'.

REPLY OF THE GOVERNMENT

Action has been taken to follow Soil Test based Fertilizer Recommendations (STFR) in collaboration with crop specific All India Coordinated Research Projects (AICRPs) and are being demonstrated through FLDs. As recommended, the STFR Meter will be used and popularized. Pusa STFR Meter has already been licensed to five firms. Out of those, two firms namely M/s WS Telematics Pvt. Ltd and M/s Genesis AgriTech have already started its commercial production and is available in the market. Hence, this technology is no longer in the laboratory as indicated by the Committee. The above firms are already selling Pusa STFR Meter to the farmers and other clients.

The concern of the committee regarding possible price escalation of the Pusa STFR Meter by the firms during large scale production has already been taken care of. A MRP- related binding clause has already been included in the technology transfer agreement, wherein the Institute has fixed MRP of Pusa STFR Meter at Rs. 30,000/- (excluding taxes). The firms cannot raise the price of the equipment without consulting the licensing authority at the Institute. Two other firms are bringing STFR Meter to the market shortly. The STFR Meter is supplied with a reagent kit for analysis of 50 soil samples. Subsequent reagent kit for 50 samples will cost Rs. 5000/-. Thus the cost of soil analysis for five parameters and fertilizer recommendation will be Rs. 100/- per sample. As this equipment is a portable lab itself, it should not be equated with usual soil testing kits offering only qualitative soil measurements.

Ministry of Agriculture O.M. No. 7(6)/2014, dated 12th March, 2015, Department of Agricultural Research and Education

DEVELOPMENT OF NUTRIENT FORTIFIED CEREALS

Recommendation (Serial No. 13)

The Committee note that as per a study made by ICAR malnutrition/undernutrition is not only faced by the poor but also by more than 50%

of middle income and more than 30% of upper income household as they are consuming lower than required dietary energy. They have been informed that ICAR has developed many crop varieties of rice, wheat, maize etc. with enhanced micro-nutrients/nutrient fortified cereals. They have been apprised that in order to address micro-nutrient deficiencies among rural families 510 nutritional gardens were established in 45 adopted villages in 9 states. During the year 2013-14 demonstration a millet crop including barnyard millet, singer millet, proso millet and pearl millet were laid out to sensitise the farmers. They also note that ICAR institutes have developed many products such as upma mix, pasta mix, halwa mix etc. using ingredients of pearl millet, Barli, sorghum and sawai millet. The Committee have also been apprised about partnership with fast moving consumer companies to popularize and encourage use of these products. They also note that DARE provides technological support to a programme on Nutri Farms being conducted by DAC in selection of bio-fortified food crops enriched with micro nutrients. The Committee have been informed that an ICAR-ICMR collaborative research project entitled "Health foods from agricultural, livestock and aquatic produce" to generate output in terms of functional food products and nutraceuticals to combat malnutrition and lifestyle diseases proposed for XII plan will be initiated as soon as funds are available. The Committee note the efforts made by ICAR to develop nutrient fortified crop varieties and fast food varieties based on Barly, sorghum etc. However, they are of view that the reach is too meager and there is need for initiating a mass scale awareness campaign to spread the benefit of these products. The Committee also recommend the Department to make adequate efforts to get additional funds to start ICAR-ICMR collaborative research project on "Health foods from agricultural, livestock and aquatic produce" at the earliest. They also recommend to the Department to devise a Campaign strategy in consultation with relevant Ministries of Central Government to publicise the nutrient fortified crops. They desire the Ministry to establish more Nutrition gardens and cover more States to address Micro nutrient deficiency.

REPLY OF THE GOVERNMENT

Several research programmes have been underway to address the malnutrition through development of micronutrient rich crop varieties and fortified food products at specific crop based Institutes of ICAR. Bio fortification of lentil with an objective to increase iron and zinc content and increasing protein content in cereals and pulses have been initiated. Soybean is the richest and cheapest source of good quality protein along with vitamins, calcium, iron and nutraceuticals such as isoflavones. In order to promote food uses of soybean, Directorate of Soybean Research, Indore developed genotypes containing high oleic acid (to improve the oxidative stability), KTI free lines, null lipoxygenase lines (to reduce off-flavour) and vegetable type soybeans, which were the bottle necks to promote its food uses.

The ICAR Institutes through their awareness campaign involving exhibitions, trainings, published literature and other extension activities are trying to popularize health benefits of nutricereals and soybean to improve its food uses.

At present KVKs are conducting front line demonstrations on Quality Protein Maize varieties in some parts of the country in collaboration with Directorate of Maize Research. The KVKs are also working on nutritional gardens to sensitize farmers and farm women on nutritional aspects.

An ICAR-ICMR collaborative research project entitled 'Health food from agriculture, livestock and aquatic produce' has been approved in XII Five Year Plan. A provision of Rs. 127 crore has been made for this project. It is proposed to carry out work at 31 centres (16 lead centres and 15 cooperating centres).

In addition, Department of Agriculture & Cooperation implemented a pilot scheme on "Nutri-Farms" as a sub-scheme of RKVY for establishing nutri-farms in 100 high burden malnutrition districts of 9 states namely Assam (3), Bihar (12), Chhatisgarh (3), Jharkhand (1), Madhya Pradesh (25), Odisha (6), Rajasthan (16), Uttar Pradesh (32) and Uttarakhand (2). These farms are established for cultivation and promotion of micro-nutrients rich cultivars of cereals and vegetable crops namely rice, pearl millet, maize, finger millet, wheat and sweet potato and to make Nutri-produce

available to vulnerable population. However, from 2014-15 “Nutri-Farms” scheme has been subsumed with National Food Security Mission (NFSM).

Under National Food Security Mission (NFSM), Coarse Cereals is one of the components which is being implemented with main thrust to increase Coarse Cereals production by 3 million tonnes by 2016-17. NFSM- Coarse Cereals covers maize, sorghum, barely, pearl millet, finger millet and small millets (kudus, barnyard, foxtail, proso and little millet). It is being implemented in 264 districts (covering all districts of North-Eastern states and Hill states Jammu & Kashmir, Himachal Pradesh and Uttarakhand) of 28 states with an object to increase their production and benefit the poor with nutritious food and to overcome the malnutrition. The proven crop production technologies developed for Coarse Cereals by National Agricultural Research System would be made available to the farmers through a series of planned interventions and financial incentives. Interventions under NFSM- Coarse Cereals being included are (i) Demonstration of improved package of practices (ii) Distribution of certified seeds (a) HYV seeds (b) Hybrid seeds.

Five Commodity-wise Centres of Excellence (CoEs) have been established to develop the recipe, value added nutri-rich product with increased shelf life, as well as training of entrepreneurs for commercialization and creation of consumption of these products. They are operationalized at (i) Directorate of Sorghum Research (DSR), Hyderabad for Sorghum (ii) Chaudhary Charan Singh (CCS) Haryana Agricultural University, Hisar for Pearl Millet, (iii) University of Agriculture Sciences, UAS, Bangalore for Small millets (iv) MaharanaPratap University of Agriculture & Technology (MPUAT), Udaipur and (v) Sam Higginbottom Institute of Agriculture Technology & Sciences (SHIATS), Allahabad for Maize. All these five CoEs are funded under NFSM during 12th Plan i.e. up to 2016-17.”

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ACTION PLAN TO CONTROL ARSENIC CONTAMINATION OF GROUND WATER IN WEST BENGAL

Recommendation (Serial No. 14)

The Committee note that more than 3 crore people in 34,000 square km area in the State of in West Bengal are prone to chronic arsenic toxicity due to contamination of ground water and high build of arsenic in soil and thereby its subsequent accumulation in crops and vegetables. They have been apprised that ICAR has come up with some practical mitigation strategy such as sowing of low arsenic accumulating rice varieties, use of organic manure, provision for irrigation from deep tubewell, sowing of legume and pulses requiring reduced irrigation etc. to control the harmful effect of arsenic contamination. The Committee urge the Department/ICAR to take steps for widespread dissemination of these strategies to local population in affected areas. At the same time, there is urgent need for taking up this issue on priority basis and granting funds for the task as it directly affects the human and livestock health. The Committee, therefore, recommend the ICAR to prepare an action plan to mitigate the harmful effects of arsenic contamination in consultation with Department of Agriculture and Cooperation, Ministry of Health & Family Welfare, Ministry of Science & Technology, Ministry of Human Resource Development, Ministry of Environment & Forest and Government of West Bengal.

REPLY OF THE GOVERNMENT

The ICAR will provide the required technological backstopping to the efforts being made by the different ministries including Ministry of Water Resources, River Development & Ganga Rejuvenation (WRRD&GR) and also help in the process of developing Coordinated Action Plan in this direction.

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Comments of the Committee

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

PROMOTION OF TECHNOLOGY OF SEWAGE WATER TREATMENT DEVELOPED BY ICAR

Recommendation (Serial No. 17)

The Committee are aware that the unplanned application of raw waste waters is increasing the risk of agricultural sustainability and consumer/environment health basically due to lack of proper treatment facilities and awareness. They are of the view that agricultural reuse of waste water, under fresh water scarcity, is essential in today's agriculture scenario not only because it meets the water demand and waste water disposal but also it enhances fertilizer security of the resources of the poor farmers. The Committee note with satisfaction that IARI has taken the first step in their Delhi Campus and has evolved an innovative and eco-friendly waste water treatment facility where it utilizes emergent wet land plants (s.a. Typha Latifolia) local media and native micro organisms, present in natural waste waters for treating 2.2 million litres/day of sewage waters. Within one and half year of its commencement it has been revealed the performance of the plant w.r.t. Turbidity (99%), Nitrate (95%), Phosphate (90%), Lead (81%), Iron (99%) and other pollutants normally present in local municipal waste waters. They have been apprised that the technology used in this waste water treatment system is associated with just 1% energy requirement of the conventional system; zero chemical application, zero-sludge generation, 50-60% reduced treatment cost and no skilled requirement. The Committee note the multifarious advantages of the above eco-friendly and economic initiative vis-à-vis conventional water processing system and feel that this technology needs to be promoted extensively. They, however, find that this initiative is in its nascent stage. The Committee, therefore, strongly recommend that the Department/ICAR should interact with State Governments/MCD and educate them on the advantage on this eco-friendly, low cost waste water treatment method of waste water disposal which can be reused in agriculture especially where there is fresh water scarcity. The benefit of zero-sludge and other pollutants through this process, which has become an increasing menace in municipalities could also be highlighted to them. The Committee urge the Department/ICAR to take up the

matter with concerned Ministries/Departments/State Governments/municipalities to adopt this system expeditiously for their all round benefits. DARE/ICAR should through their network and linkages with SAUs approach the State Governments/Municipalities urgently.

REPLY OF THE GOVERNMENT

IARI has developed an innovative and eco-friendly waste water treatment technology using *Typhalatifolia*, local media and native microorganisms present in waste water for treating sewage water to the capacity of 2.2 million litres per day. This innovative technology is being popularized through print media, TV programmes, participation in exhibitions, agricultural fairs, exposure visits of the stakeholders etc. For further dissemination and up-scaling the technology is being appraised to the Urban and Local Boards. Structured training programmes are being organized for capacity building and skill development amongst the stakeholders. Customized training modules are also developed for Delhi Jal Board (DJB), Centre for Science and Environment (CSE) and International Commission on Irrigation and Drainage (ICID). This falls under the mandate of Ministry of Urban Development to whom the technology details have already been communicated. The Ministry of Urban Development issues periodic advisories to the stakeholders for promotion of sewage water.

The following public and private sector players have evinced a lot of interest in the replication of this technology:

1. **Delhi Development Authority:** For augmenting potable water supply in Dwarka sub-city through the recharging of the groundwater table with the treated Palam drain waters. Initial plan is to use the proposed technology to treat 50 MLD of Palam drain waters.
2. **Central Jail, Tihar, New Delhi:** For reuse of wastewater in Central jail.
3. **National Security Guards at Manesar Garrison in Gurgaon:**For curbing water scarcity during summer seasons in the campus.

4. **Centre for Urban and Regional Excellence (an NGO):** For developing alternate solutions for water conservation and preparation of Ward sanitation plans for Delhi under a project: "Swatch Delhi, Swatch Delhi"
5. **KRIBHCO, Noida:** For reuse and recycling of 25 KLD wastewaters in their corporate office.
6. **Horizon Research, Mathura Road, New Delhi:** For putting up the proposed technology in their farm.
7. **Durgapur Steel Plant, Steel Authority of India Ltd., West Bengal:** For sewage water treatment and reuse in Durgapur Steel Plant at Durgapur, West Bengal.
8. **Mapsets Engineering Services:** For stopping pollution of Ganga River by the Varanasi city, through a MOWR funded program on National Mission for Clean Ganga.
9. **Bedmutha Industries Ltd, Maharashtra:** For developing an effluent treatment plant at Nardana, MIDC, Dhule (Maharashtra).
10. **Re Ventures, West Bengal:** For developing a low-cost and energy efficient wastewater treatment plant at Siliguri city (20 lakh population) and Darjeeling town.

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CREATION OF SYSTEM OF NATIONAL CROP PLANNING

Recommendation (Serial No. 18)

The Committee find that the Crop Science Division have released 106 improved varieties/ hybrids of different crops including 70 cereals, 15 oilseeds, 8 pulses, 3 fibre crops, 4 forage crops and 6 sugarcane during 2013-14. The Committee are, however, concerned about the release of these crops and its reach to the small and marginal farmers. Further, they are also aware that small farmers are mostly not aware of the prices for the crop till the harvest time. In the process, at times, lots of post-harvest losses take place affecting the financial health of these farmers. The Committee feel that the Department should guide the small and marginal farmers

about planning the crops depending on the region, fertility of soil, congenial crop varieties and prices forecasts (depending on the market forces in the country). The Committee, therefore, desire that the Government should make a serious effort by carrying out a systematic and objective national crop planning along with crop planning for small and marginal farmers.

REPLY OF THE GOVERNMENT

The Council through PDFSR Modipuram and CRIDA Hyderabad has developed viable and remunerative cropping systems suited to small and marginal farmers of irrigated and rainfed regions respectively of the country.

ICAR-National Institute for Agricultural Economics and Policy Research (NIAP) has undertaken a network study to develop regional crop plans for better resource use efficiency and improving natural resource sustainability across production environments. It will compare net income from different crops at market prices, economic prices net of subsidies on inputs and net income based on natural resource valuation that takes into account effect on natural resources and environment. The study is implemented in 7 states in collaboration with state agricultural universities which are collecting farm level data under “ Comprehensive Scheme for Estimation of Cost of Cultivation of Various Crops” implemented by Ministry of Agriculture, Government of India.

Crop contingency planning and advisories are issued from time-to-time to the farmers by the Institutes to address abrupt weather conditions as well as disease and insect-pest outbreaks in different crops. The region wise contingency planning of crop varieties is regularly issued to small and marginal farmers through KVKs, Institutes website and other mass media. Crop planning and its dissemination to small and marginal farmers would be further strengthened, as suggested by the committee.

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DEVELOPMENT OF NEW DROUGHT RESISTANT SEED VARIETIES

Recommendation (Serial No. 20)

The Committee note that development and availability of drought resistance seed varieties are required by farmers in large part of the country facing problem of erratic monsoon. The Committee note that 65 varieties of drought resistant varieties of rice, wheat, Barley, sorghum, maize, horse gram etc, were developed by Crop science division of ICAR during the last five years. They also note that 100 promising genotypes of wheat, rice, maize and pulses were identified for drought, heat and flood tolerance under the National Initiative on Climate Resilient Agriculture (NICRA). The Committee are, however, of the view that there is need for further research work for development of new varieties of crops with use of genotypes identified under NICRA. The Committee, therefore, recommend the DARE to fast track the R&D work under the NICRA so that new and better drought resistant seed varieties are made available to the farmers in the affected areas.

REPLY OF THE GOVERNMENT

Continuous R&D efforts are made to screen genotypes against various abiotic stresses like temperature and moisture and utilize in breeding superior varieties suitable for marginal and rainfed conditions. Drought tolerant varieties have been already developed and recommended for drought situations. Besides, emphasis has been laid on reducing the duration of crops for improved adaptation in the situation of terminal heat and drought.

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HORTICULTURE SCIENCES

Recommendation (Serial No. 21)

The Committee are aware that horticulture is a crucial component of the agriculture which is the mainstay of the Indian economy by virtue of India being bestowed with diverse agro-climatic zones and regional crop variation. The

Committee were apprised that with R&D network across the country, horticulture is changing rapidly in terms of production and productivity. The horticulture production is 2.68 million tonnes during 2012-13 and it contributes approximately 30.4% of agricultural GDP. The Committee find that `422 crore were allocated for horticulture sector for the Twelfth Five Year Plan. However, they are unhappy to note that only 45% (BE) i.e. only `650 crore have been allocated during the first three years of the Twelfth Plan. Furthermore, the allocation comes to only 20.6% (`294 crore) for the first two years of the Twelfth Plan. The Committee note that the growth in exports of fresh fruits and vegetables is 14% while it is 16.2% in case of processed food and vegetables. The Committee are aware that the growth in horticulture sector has virtually improved the economy in several States. They are also of the view that focused attention on horticulture with the research and development input would result in increased production as well as exports besides bringing about economic development not only for the States but for the nation as a whole. They recommend to the Department to highlight the growth potential of this sector to the Planning Commission and the Ministry of Finance and obtain funds for future research and development of this sector.

REPLY OF THE GOVERNMENT

Horticulture has great importance, both as a share in agricultural output and in the food basket in the country. As a result, the farmers are also responding to the market signals and gradually shifting production-mix to meet the growing demand for horticultural commodities and a clear shift from food grains towards fruits and vegetables can be seen. It is evident from the higher horticultural production to the tune of 268.8 million tonnes during the year 2012-13, which is expected to reach 280.7 million tonnes during the year 2013-14.

The Planning Commission and Ministry of Finance (MoF) had already been requested to allocate more funds for research & development of this sector.

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AGRICULTURE ENGINEERING

AVAILABILITY OF FUNDS

Recommendation (Serial No. 22)

The Committee find that the network of AICRP help in identification of specific regional problems. They, however, find that the budget allocation for Agriculture Engineering Sector for the year 2014-15 is `85 crore (BE) while the RE for the year 2013-14 was `45 crore and for the year 2012-13 it was `52 crore. They find that allocation earmarked for the Twelfth Plan is `1100 crore. It can be seen that on an average the allocation should have been `220 crore per year, however, even in the 3rd year the allocation is not even 50% of the average per year for the Twelfth Plan. In response to the concern of the Committee about the implementation of R&D work in the institutes, the Department apprised them that the low allocation inter-alia affected the activities relating to promotion of mechanization for small and marginal farmers and also the promotion of post harvest technology, R&D work in precision farming, consortia research farming on farm mechanization and precision farming, front line demonstration programmes like improved tools, equipments and technologies etc. They note that level of farm mechanization in the country averages only around 25% which is quite low as against 90% in the developed countries. The Committee feel that these are the vital aspects where the AICRP network operates and due to the lack of funds allocation to the agricultural engineering sector, the most affected will be the small and marginal farmers. They recommend that the dissemination of information/knowledge relating to research, the prices and the geo-regional synchrony should reach the small and marginal farmers in region-wise capsules. They also recommend to the Department to impress upon the Ministry of Finance and the Planning Commission the need for developing the knowledge and information relating to implements/instruments/machines being developed by ICAR for the welfare of small and marginal farmers and seek greater funds for this sector.

REPLY OF THE GOVERNMENT

The Council shares the comments of the committee regarding reduced availability of funds for promotion of farm mechanization and post-harvest technology related

activities. Efforts have continuously been made and are still being made to cater to the Research & Development requirements of implements / machinery for small and marginal farmers in different agro-climatic regions through the network of centers of AICRPs on (i) Farm Implements & machinery, (ii) Renewable Energy Sources, (iii) Utilization of Animal Energy, (iv) Ergonomics & Safety in Agriculture, (v) Post-Harvest Technologies, and (vi) Application of Plastics in Agriculture. Keeping in view fast tracking and enhancing levels of farm mechanization and post-harvest & value addition, the council has approved continuation of the above mentioned six AICRPs as well as 5 new Consortia Research Platforms on (i) Farm Mechanization & Precision Farming, (ii) Energy from Agriculture, (iii) Secondary Agriculture, (iv) Health Foods, and (v) Natural Fibres in the XII Plan to be operated through network of centers to cater to the needs of different aspects of small and marginal farmers in the country.

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FIXATION OF PRICE FOR AGRICULTURAL IMPLEMENTS DEVELOPED BY ICAR

Recommendation (Serial No. 23)

The Committee have been informed that Agricultural Engineering division of ICAR which is entrusted with the responsibility of developing suitable agricultural implements. According to the Department regional specifications have developed 65 implements/instruments/machines during last three years. The divisions have also been successful in commercializing 79 agricultural implements/machines in the same period thereby, generating revenue of `67.4 lakhs. They have also been informed that Technology pricing/valuation is context-specific and can vary on case-to-case basis and valuation/pricing and terms and conditions for licensing/commercialization emerges from the ground work of valuation, market research and business proposal development and done under the guidance of senior experienced scientists of relevant disciplines. The Committee are of view that there is need to enhance the abilities of institutes working under the division to increase the number of product development. They emphasize that the Department

should focus on research of light weight technology and implements/machines/instruments so that small and marginal farmers are able to use them effectively on their small and fragmented land holdings. The Committee, therefore recommend to the Department to enhance the target for development of new implements/Machines/ instruments. At the same time, the Committee strongly recommend the Department to incorporate suitable provisions in the terms and conditions as a prerequisite for transfer of technology of the research relating to implements/machines/instruments developed by ICAR for commercial use so that these are available to the farmers at reasonable prices.

REPLY OF THE GOVERNMENT

Over the years the Department has developed a number of technologies/processes for commercial purposes and has also signed licence agreements with various firms. The list of various technologies/processes developed is as under:

S. No.	Technology	Year	Number of MoAs/ LAs signed
1.	CIAE Pedal cum Power Operated Seed Cleaner cum Grader with and without motor	2009-10	08
	Grain flour separator		04
	Animal drawn planter		05
	Groundnut decorticator for women		04
	Groundnut cum castor decorticator		03
	Groundnut/ sunflower decorticator with feeder and separator		02
	Manual soybean dehuller		04
	Motorized soybean dehuller		04
	Grain pearler		01
	Manual potato peeler		03
	Pedal operated potato peeler		04
	Pedal operated potato slice		04
	Multi-purpose grain mill		03
	Soybean blanching unit		03
	Soybean flaking machine		02
	Cottage scale soy paneer plant		06
	Paddy thresher		02
	Light weight power tiller		02
	Multicrop thresher		03
	Paddy transplanter		02
	Power tiller operated reaper		03
	Self propelled reaper		05
	Tractor mounted Reaper		02
	Power weeder		04
	Sack Holder with Grain Cleaner		02
	Rotavator blade		01
	Tractor drawn vegetable transplanter		01
Manual rice planter	01		
Inclined plate planter	05		
Pneumatic planter	03		
Power Tiller Drawn Seed cum Fertilizer Drill	03		
Tractor operated Groundnut Digger	01		
Hand wheel hoe	01		
2.	Portable Weighing Machine and systems for animals	2010-11	01
	Security systems and advanced electronic systems for identification of animals		01
	Industrial automation for agricultural use		01
	Peg type puddler		02
	Multi crop plot thresher		01

S. No.	Technology	Year	Number of MoAs/ LAs signed
3.	Manually operated conoweeder- plastic moulded cones	2011-12	01
	Power operated potting machine		01
	Improved manual metallic conoweeder		05
	Power operated curry leaf stripper		01
	Walking Type Manual 3-Row Rice Transplanter (CIAE-IEP Coimbatore design)		03
	Tractor operated turmeric harvester (CIAE-iep design)		02
	Multipurpose tray / Isu dryer		03
	Power tiller drawn auger digger		03
	Animal multirow rice seeder		01
	Improved bakhar		01
	Animal drawn inclined plate planter		01
	Power tiller operated till plant machine		01
	Manual 4 row rice seeder		01
4.	Rotary dibbler	2012-13	01
	Grubber weeder		01
	Tubular maize sheller		01
	Two row seed drill		01
	Two row seed cum fertilizer drill		01
	Solar cocoon stiffer		01
	Multi fuel cooking stove		02
	Charring kiln		02
	Briquetting machine		02
	CIAE dynapod		02
	Rotary maize sheller		01
	Power tiller drawn seed drill		01
	Power tiller drawn cultivator		01
	Semi-Axial flow thresher		01
	High capacity multi-crop thresher		01
	Tractor operated two row sugarcane bud-chip seedling planter		01
	Aloe vera gel extraction unit		01
CIAE multicrop thresher	01		
5.	Multi-nutrient biscuit	2013-14	01

License agreement signed

S. No.	Name of Firm	Date	Name of Technologies	Details of fee received (Inclusive of service tax)
1.	M/s Bio Nutrients (India) Pvt. Limited, M.P. Nagar, Bhopal	11/06/2014	CIAE Soy-Butter	Rs. 1,12,360/-
2.	M/s TAFE, No. 861	05/05/2014	Self-Propelled	Rs.

S. No.	Name of Firm	Date	Name of Technologies	Details of fee received (Inclusive of service tax)
	Annasai, Chennai – 600 002		Hydraulic Multipurpose System for Orchard Operations	11,24,000/-
3.	M/S AVM Engineering Industries, TN, Pin-636004	27/04/2014	CIAE Millet Mill	Rs. 1,12,360/-
4.	M/s TAFE, Chennai	31/07/2014	1. Inclined Plate Planter 2. Roto Till Drill	Rs. 3,37,080/-
5.	M/s Valampuri Industries, Coimbatore	11/07/2014	CIAE Millet Mill	Rs. 1,12,360/-
6.	M/s Perfura Technologies India (Pvt.) Ltd., Coimbatore		CIAE Millet Mill	Rs. 1,12,360/-

2. Technologies/ Processes developed by Agricultural Engineering Division of ICAR

1. Animal drawn farmyard manure spreader for soybean and wheat crop
2. Harnessing system of Single bullock operated cart
3. tractor operated rear mounted onion harvester
4. Controller for Seed/fertilizer drill and its integration with electronic drive system
5. Equipment for sugarcane bud chip nursery raising with respect to pro-tray filling and seeding
6. Controller for variable seed and fertilizer application
7. Power Weeder For Cassava Planted In Mounds In Sloppy Terrain
8. Tractor Mounted Cone Penetrometer
9. Pre-emergence herbicide strip-applicator
10. Package of improved implements for raised bed cultivation
11. Harvesting tools/ machinery for oil palm-back pack type
12. Animal drawn garlic planter
13. Tractor drawn GPS based granular fertilizer applicator
14. Covered cultivation technology for capsicum crop
15. Size reduction machine for Arecanut Sheath
16. Multi millet thresher
17. Millet dehusker
18. Tractor operated cassava harvester
19. Banana pseudostem shredder
20. Mechanized pruner for high density guava orchard
21. Furrow opener for differential depth placement of fertilizer and seed

22. Prototype model of mechanical system for sugarcane bud chip/ sett treatment for sugarcane
23. Bullock cart with yoke (NGO design)
24. Banana core juice extractor
25. Banana core slicer cum dicer
26. Ripening chamber (1 ton/ batch) for banana
27. CIAE Millet Mill (Model II)
28. Briquette of Lantana biomass
29. Water scrubber for biogas
30. LPG Supplementation system to overcome sudden loading of biomass based power plant
31. Bio-char pyrolyzer for agro residues
32. Torification unit for processing of biomass
33. Entrained gasifier for different crop residue
34. Micro-controller based single axis sun tracker for SPV panel
35. Moringa leaf stripper
36. Cashewnut roasting machine
37. Peeler for peeling of safedmusli
38. Process for cleaning and dehusking of kodo-kutki
39. Technology for surface disinfestations and MAP packaging for spinach
40. Process technology for fermented and non-fermented beverages from tofu whey
41. Software protocol for determination of image quality of digital radiographs of mangoes
42. System and approach for non-destructive quality evaluation of mango
43. Technology for modified atmospheric packaging of guava and tomato
44. Process for production of improved quality soymilk with minimal beany flavour and flatulence
45. Process Technology for enzymatic refining of soybean oil
46. Technology for surface disinfestation
47. Instant soymilk powder
48. Soy based noodles
49. Okara and millet based muffins
50. Multi-nutrient extruded snacks
51. Probiotic soy-cheese spread
52. Process protocol for disinfestations of pulses in pilot scale microwave unit
53. Basket Centrifuge
54. Ber Fruit Grader
55. Castor Depodder and Decorticator
56. CIPHET- Banana comb Cutter
57. CIPHET Tomato Grader
58. CIPHET Fruit collector cum grader for saving of fruits
59. Fish Processing Table cum Retail Sales Unit

60. Low cost Flour mixer unit
61. Groundnut deskiner-2010
62. Groundnut pod grader
63. Hand Tool for Easy Separation of Arils from Pomegranate
64. Indigenous meat cutter
65. Low cost fish descaling hand tool
66. Mobile iced fish storage and transport chamber
67. Poultry Processing Table and Poultry Slaughter Cone
68. Mechanical Device for Detection of Insects in stored grains
69. Small Capacity Maize Degermer for dry degerming of Maize
70. Sunflower Dehuller
71. Rotary maize cob sheller
72. Evaporative Cooled structure (5-7 tons)
73. Low cost technique for enhancement of shelf life of tomato
74. Minimal processing of Vegetables
75. A new process for milling of millets to get refined powder
76. Process of manufacturing mix for ready to constitute makhana kheer
77. Processing of Aonla for manufacturing of value added products
78. Sunflower kernel based confectionary products
79. Process technology for making "Anardana Ready to mix Chutney"
80. Value added products from meat
81. Carrot kheer mix formulation
82. Energy efficient Bengal gram *Sattum* making technology
83. CIPHET-Aonla Pricking machine
84. Lotus seed decorticator
85. Low Cost Tray Dryer Having a Unique Design of Plenum Chamber
86. Groundnut pod Decorticator
87. Mobile agro processing unit suggested for cleaning, grading, destoning of food grains
88. Low cost poly house
89. Vendor's vegetable cabinet

As recommended by the committee, BPD units of ICAR/ SAUs incorporate suitable provisions in the terms and conditions in Memorandum of Understanding for commercialization so that machines, implements, technologies etc. are available to the farmers at reasonable cost.

The design of equipment/machine is transferred on non – exclusive basis for a period of five years at a license fee decided by Institute Technology Management Committee of the institute. Other terms and conditions were in accordance with

ICAR guidelines provided vide “Training, Consultancy Contract Research and Contract Service in ICAR System”, Rules and Guidelines, ICAR, New Delhi (March 1, 1997) and now as per revised, “ICAR guidelines for Professional Service Functions (Training, Consultancy Contract Research and Contract Service)”, ICAR New Delhi (October, 2014).

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KRISHI VIGYAN KENDRA (KVKs)

AVAILABILITY OF FUNDS

Recommendation (Serial No. 24)

The Committee are aware that KVKs do not have adequate staffs and other infrastructure at their disposal to carry out activities assigned to them. The Committee note that the task ahead of the Department relating to equipping the KVKs in terms of trainer, resource person infrastructure, knowledge based on location specific requirements, paraphernalia for demonstrations/trials on crops, livestock, fisheries is of mammoth nature. At the same time, they find that KVKs proposed during XII Plan could not be taken up for want of approval of Cabinet. They are also aware that the allocations made for KVKs during first three year is `1575 crore, which is almost half of that proposed by DARE for the purpose and has been further reduced at RE level. The Committee are of the view that without availability of funds, which are only 27% (approx.) of the earmarked outlays for the Scheme during XII Plan, this significant Research work will be undone i.e. if the knowledge is not disseminated to farmers the entire exercise will be futile. The Committee, therefore, strongly recommend that Department approach Ministry of Finance and Planning Commission highlighting the importance of developing KVKs with proper infrastructure for growth of Agriculture Sector and persuade them for higher allocations. They also recommend to the Department to pursue the matter relating to approval of KVK to be opened during XII Plan urgently as already about three years of the plan period have elapsed. With this rate the Department will not be able to achieve their targets for the plan. The Committee also desire that

Department should develop a mechanism to coordinate with the State Governments to come forward proactively for validation of the Research work based on practical necessities on priority basis.

REPLY OF THE GOVERNMENT

As regards efforts for higher allocations to KVK scheme, the proposal has been submitted to the Government for approval of KVK scheme during XII plan with higher allocation during XII plan. The proposal also includes creation of new infrastructure and vital facilities in more KVKs including soil, water and micronutrient testing facilities; rain water harvesting and micro irrigation; mini seed processing facilities; portable carp hatchery; technology information units; and integrated farming units. The approval of the Government is likely to be received soon.

As far as coordination with states Governments for validation of research is concerned, it is stated that the KVKs coordinate with Agricultural Technology Management Agency (ATMA) at district level and take up the researchable issues related to validation of technological options for their practical application in farmers' fields. For this purpose a district level Joint Action Plan for enhancing interface between scientists, extension functionaries and farmers will be prepared through a joint meeting of KVK and ATMA official under the chairmanship of the District Collector. Further a quarterly interface meeting will be held by all KVKs involving all line departments for implementing the Joint Action Plan and to share new technologies for wider dissemination in the district.

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IMPROVEMENT IN WORKING OF KVKs

Recommendation (Serial No. 25)

The Committee note that Krishi Vigyan Kendra (KVKs) act as centre for agriculture extension in the country. The KVKs assessed, refined and demonstrated technology/products through 33791 on farm trials and 1.71 lakh frontline demonstrations in different farming system in the year 2013-14 (upto March 2014).

The KVKs have trained 14.88 lakh farmers, trained 1.18 lakh extension personnel, participated in 102.41 lakh extension programmes for creating awareness on improved agricultural technology, produced 15700 tonnes of seed and provided 102.53 lakh plating material, tested 2.91 lakh soil & other samples in the year 2013-14 as against 17.38 lakh, 1.42 lakh, 170.16 lakh, 17400 tonnes, 117.46 lakh, 3.78 lakh for the year 2012-13 respectively. The aspect covered by KVKs mobile advisory has increased to 16.28 lakh as compared to 11.14 in the year 2012-13. The Committee feel that presence of a strong institutional delivery mechanism for agricultural inputs is foundation for productive and remunerative agriculture. The Committee are, however, concerned to note that the achievements of the DARE in agriculture extension has reduced in 2013-14 vis-à-vis last year on all the important parameters of the scheme drastically, which is very alarming. The only area that have shown sign of growth is mobile advisory. The Committee are of the view that the Department needs to analyse and revisit the areas of concern and ensure that the knowledge obtained from research percolates to the fields and farmers and the trainers. The Committee also recommend that the Department should use the vast network of Rural Banks/Post Offices for dissemination of improved technologies and improved varieties of seeds besides capacity building programme of Branch Post Masters.

REPLY OF THE GOVERNMENT

Though there was shortfall in some of the KVK activities during 2013-14 as compared to 2012-13, however, the achievements were higher during 2013-14 in respect of main activities like on-farm trials and front line demonstrations. Similarly, efforts are on to achieve the targets during 2014-15. With regard to revisiting the areas of concern and percolation of research knowledge to the fields and farmers, it is stated that besides creating new infrastructure facilities and other vital facilities, the proposal has been made for approval of the Government for enhancing the number of staff of KVK from the existing strength of 16 to 22 by creating 04 additional posts of Subject Matter Specialists and 02 posts of Technicians during XII Plan to extend KVKs' reach to more number of farmers in the district,

As regards using the network of post offices for disseminations of improved technologies and varieties of seeds, it is stated that already work on this approach has been started by Indian Agricultural Research Institute on Pilot basis in few States. Based on the success in this approach the programme will be extended in other States from next year.

Ministry of Agriculture O.M. No. 7(6)/2014, dated 12th March, 2015, Department of Agricultural Research and Education

EXTENSION OF AICRP ON HOME SCIENCES TO ALL STATE AGRICULTURAL UNIVERSITIES

Recommendation (Serial No. 27)

The Committee are aware that women in the country play a significant role in agricultural and allied sector activities. The Committee have been informed that Directorate of Research on Women Agriculture (DRWA) including AICRP on Home Science carry out activities on identifying gender issues, testing appropriateness of available farm technology and programmes with women perspective, drudgery reduction, empowerment of farm women, and capacity building of R&D to address gender issues in agriculture. They also note that many technological innovation in such activities where largely women are involved such as development of potato picker, grain spreading tools etc. have been developed by the DRWA and AICRP. They have also been informed during the XII Plan period the DARE plans to extend AICRP to three more State Agriculture University in Meghalaya, Tamil Nadu and Gujarat. The Committee are of view that much more focus of research is required to address and facilitate women in their activities in agriculture and development of technology and agricultural implements which are specifically designed for reducing drudgery faced by women engaged in agricultural activities. The Committee, therefore recommend DARE to allocate sufficient fund for this important area of research so as to facilitate women working in Agriculture sector. At the same time, the DARE should also try to extend AICRP on home sciences to all State Agricultural Universities apart from those planned in XII Plan.

REPLY OF THE GOVERNMENT

The concern of the Committee has been noted and appropriate action shall be taken up to extend the AICRP Home Science to all the left over State Agricultural Universities after assessing the feasibility.

Ministry of Agriculture O.M. No. 7(6)/2014, dated 12th March, 2015, Department of Agricultural Research and Education

ATTRACTING YOUTH FOR CAREER IN AGRICULTURE

Recommendation (Serial No. 28)

The Committee are aware that today's youth are unenthusiastic about taking up agriculture as a career. The youth are moving away from agriculture as a profession due to limited employment opportunity, high cost of production and low returns from this sector vis-à-vis the tertiary sector. They were, however, apprised by the representatives of DARE that this is a misnomer and mis-perception, the truth is that an investment of Re.1 in agriculture sector reaps a return of `13.5. The Committee take note of rate of return on the investment in agricultural research. They also note that three new CAUs are being established during the XIIth Plan for region specific agricultural research & education, Agricultural research at Andhra Pradesh and Horticulture University in Telangana etc. The Committee in this regard urge the Department to revisit the existing agriculture education system in the country and change the perception among youth about the remunerations from agriculture sector. They also recommend that the initiatives taken by the Department regarding setting up of CAUs for region specific agricultural research, AU in Andhra Pradesh & Horticulture University at Telangana, Student Rural Entrepreneurship Awareness Development Yojana is though a welcome step, however, should see light of the day within the stipulated time frame. They strongly recommend the Department to make all-out effort for attracting, mentoring and retaining youth in agriculture.

REPLY OF THE GOVERNMENT

In order to attract youth for career in Agriculture, DARE/ICAR has planned a programme 'Student READY' during XII Plan. The programme shall be implemented after getting approval from the Government. Apart from this ARYA (Attracting and Retaining Youth in Agriculture) proposes a direct engagement of the National Agricultural Research System with potential rural youth. It aims to operate through selected Krishi Vigyan Kendras in the country and envisages supporting and guiding rural youth towards income generating technologies, services and enterprises, which are essentially required in the villages. The project proposed to provide technical and financial support to upscale/commercialize promising innovations that provide the required incentive to youth to remain in villages.

Ministry of Agriculture O.M. No. 7(6)/2014, dated 12th March, 2015, Department of Agricultural Research and Education

NATIONAL AGRICULTURAL INNOVATION PROJECTS (NAIP)

Recommendation (Serial No. 29)

The Committee note that National Agricultural Innovation Projects (NAIP) is initiative of the Indian Council of Agricultural Research (ICAR) with funding of Government of India and World Bank to broadly identify and promote technology led innovations in agriculture sector. The project aims to enhance multi-dimensional competence for steering-up agricultural R&D. The Committee have been informed that 171 public-private partnerships have been established in 203 sub-projects under NAIP financing and with additional financing from the Global Environment Facility(GEF) with total funding of `1518.87 crore. The Committee have been apprised that 118 patent/intellectual property protection application were filed and 82 technologies/products commercialized based on the NAIP research. Further, 57 new rural industries were piloted and over 8,371 hectares of farmers' agricultural land brought under sustainable land-management practices under these projects. While appreciating achievements under the scheme, the Committee are of view that there is need for more of such projects where funding could be arranged through international organizations. They emphasize that the focus of such projects should

reflect a shift toward demand driven research. The Committee, therefore, recommend DARE to strive hard to arrange more funds for R&D work in agriculture so that problem arising due to reduced allocation to the sector could be replenished up to some extent.

REPLY OF THE GOVERNMENT

The department has already initiated the process for getting approval for the National Agricultural Education Project (NAEP) for Rs. one thousand crores through World Bank, which IS in advance stages.

Ministry of Agriculture O.M. No. 7(6)/2014, dated 12th March, 2015, Department of Agricultural Research and Education

AGGROVATE INDIA PRIVATE LTD

Recommendation (Serial No. 30)

The Committee note that AgrInnovate India private Ltd is DARE/ICAR owned PSU Company formed to promote R&D outcomes through IPR protection, commercialization and forging partnership both in the country and outside. However, the Committee note that the Company is yet to start its function effectively. The Company has generated revenue of `1.26 crore by licensing of tissue culture technology of palm oil and capacity building programmes since its inception in 2011. The company has also earned interest income of `9.06 crore from interest income. The Committee have been informed that AIL has initiated the establishment of a modern vaccine production plant (capacity 100-150 million doses) in PPP mode at Bengaluru campus of IVRI, Izatnagar in order to augment the availability of FMD vaccine. The Company is also assisting DARE on projects related to establishment of facilities for soil, water and tissue testing, seed production and demonstration, and Farm Science Centres in different countries in Africa. The Committee are of view that there is immense possibilities exist for the Company in the field of agriculture. The Committee recommend that Department should facilitate AIL to start effective marketing of technologies, seeds varieties and other R&D works of ICAR both in Indian and global market aggressively. The AIL should strive hard to achieve

success in the field of agriculture marketing on the lines of work done by Antrix corporation for marketing of R&D works done by the ISRO. The Committee are of view that ICAR should involve all Institutes to engage AIL for commercialisation of R&D works of these Institutes.

REPLY OF THE GOVERNMENT

AgrInnovate India Limited has focused on translating potential technological outputs of ICAR into marketable products and commercial activities. In this endeavour, the Company has licensed the following technologies:

- Tissue Culture Technology of Oil Palm developed by Directorate of Oil Palm Research (DOPR), Pedavegi in partnership with Biotech Consortium India Limited (BCIL) was licensed to three more private partners, on a non-exclusive basis. AgrInnovate through its technical partner, DOPR is providing hand holding and training to the technical personnel. The Department of Agriculture and Cooperation, Government of India has also launched special programme on Oil Palm Area Expansion (OPAE) during 2011-12.
- Diagnostics of Foot-and-mouth disease (FMD), which is a major livestock disease of trans-boundary importance, affecting cloven-hoofed animals has been licensed by AgrInnovate to Arsh Biotech Pvt. Ltd for '3AB3 and 3ABC Non-structural proteins. This Enzyme-linked immunosorbent assay (ELISA) diagnostic test can differentiate infected from vaccinated animals (DIVA)' with more sensitivity & specificity and is more cost effective. The technology has been developed at Project Directorate on Foot and Mouth Disease (PDFMD), Mukteswar.
- Thirty One Agriculture Engineering Technologies from Indian Institute of Horticultural Research (IIHR), Bengaluru have also been licensed by AgrInnovate to a private firm which is working towards their commercialization.

AgrInnovate has further compiled a list of potentially marketable technologies developed by ICAR Institutes which includes wheat varieties from Directorate of Wheat Research (DWR), Karnal; Bottled Sugarcane Juice from Tamil Nadu Agricultural University (TNAU), Coimbatore; Intermediate Moisture Chicken from

Central Institute of Avian Research (CARI), Izatnagar; BT Cotton detection kits from Central Institute of Cotton Research (CICR), Nagpur and Dip Stick Technology of Central Potato Research Institute (CPRI), Shimla. Some of the Fisheries Research Institutes are already in touch with AgrInnovate India Private Ltd for getting evaluation and commercialization of some of their Technologies.

Capitalizing on demand in the area of human resource and capacity building in agriculture especially those in African and Asian countries, AgrInnovate has attempted to fill this gap by conducting various capacity building programmes. These include short term Training on Chick Vent Sexing and Seed Quality Assurance sponsored by West Africa Agricultural Productivity Programme (WAAPP) for ten Nigerian Nationals, at Central Avian Research Institute (CARI), Izatnagar and Indian Agricultural Research Institute (IARI), New Delhi respectively.

Three training-cum-workshops were conducted under ASEAN – India Cooperation Fund on Conventional and Molecular Techniques for Diagnosis of Trans-boundary Animal Diseases at High Security Animal Disease Laboratory, Bhopal; IT Application for Agricultural Extension (e-Extension) at National Academy of Agricultural Research Management, Hyderabad and Organizing and implementing an effective National Seed Quality Control System at Directorate of Seed Research, Mau. The programmes benefitted 51 participants from ASEAN member countries including Cambodia, Indonesia, Laos, Malaysia, Myanmar, Philippines, Singapore, Thailand and Vietnam.

Customized training programmes, sponsored by International Centre for Agricultural Research in Dry Areas (ICARDA) were conducted for 16 participants from Iraq on Bio fertilizer & Bio pesticides and Bio organic Fertilization at IARI, New Delhi; Insect Biological Control (Mass rearing) of Agriculture Pests at NBAll, Bangalore; and Training on Seed Technology and Pesticide testing at IARI, New Delhi. Also two participants from Mongolia attended FAO sponsored training on Pesticide Testing at IARI, New Delhi.

In addition, with the technical backstopping from Central Institute of Agricultural Engineering (CIAE), Bhopal, AgrInnovate India facilitated technical consultancy for preparation of feasibility report on Establishment of Tractor Assembling Plant and Farm Equipment Manufacturing Unit at Tanzania.

Ministry of Agriculture O.M. No. 7(6)/2014, dated 12th March, 2015, 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**

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CHAPTER IV

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

REVENUE RECEIPT OF DARE/ICAR

Recommendation (Serial No. 07)

The Committee note that revenue generated by the institutes under ICAR are not reflected in Revenue Receipt presented to the Lok Sabha. They have been apprised that revenue generated from consultancy services and training are utilized as per approval given by the Ministry of Finance and that license fee generated by the institutes is remitted to the ICAR as per ICAR Guidelines. The Committee are given to understand that all revenues received by the Government by way of taxes like Income Tax, Central Excise, Customs and other receipts flowing to the Government in connection with the conduct of Government business i.e. Non-Tax Revenues are credited into the Consolidated Fund constituted under Article 266 (1) of the Constitution of India. The Committee, therefore, find violation of this provision of the Constitution as any money deposited to the Consolidated Fund of India ought to have the approval of Parliament for incurring expenditure. They desire that such revenue generated under the administrative control of the Department should be reflected in the budget documents including detailed Demands for Grants. They would like DARE to clarify the issue and rectify the irregularity, if any, in this regard.

REPLY OF THE GOVERNMENT

The General Financial Rules GFR 2008(iii) states "All autonomous organizations, new or already in existence should be encouraged to maximize generation of internal resource and eventually attain self-sufficiency". ICAR, though a non-profit scientific organization, generates internal resources through the following:

5. Income from Sales of farm produce/ livestock
6. Income from Services
7. Fees/Subscriptions

8. Income from Royalty, Publications etc.

The Revenue generated by ICAR is netted while submitting the demand of funds to the Ministry of Finance and as such the Revenue generated by ICAR is utilized by ICAR itself. The utilization of internal resources as such is permitted by Secretary (Expenditure), Ministry of Finance vide D.E.A Id. No. F. 2(45)-B (CDN)/2010 dated 12/09/2011. The revenue generated by ICAR are not transferred to the Department viz., DARE and as such do not form a part of Non-Tax revenues of DARE.

Ministry of Agriculture O.M. No. 7(6)/2014, dated 12th March, 2015, Department of Agricultural Research and Education

Comments of the Committee

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

AVAILABILITY OF ADVANCE PRICE FORECAST OF AGRICULTURAL COMMODITY

Recommendation (Serial No. 16)

The Committee are of the opinion that availability of advance price forecast before sowing of crops could be very beneficial to the farmers in pre-sowing decision making and thereby enhancing farmers' income. The Committee note that ICAR is providing facility of price forecast for twenty agricultural commodity through network of 16 centres located throughout the country. The Committee note the efforts of ICAR in the important area of agricultural extension. However, the Committee are of view that there is need for bringing more crops especially the major crops region-wise under their purview in order to cover larger number of farmers in other parts of the country as well. The Committee, therefore, recommend the DARE to enhance the coverage of agricultural commodity along with number of centres providing price forecast for the benefit of farmers especially the small and marginal farmers in the pre sowing decision making.

REPLY OF THE GOVERNMENT

In order to help farmers take judicious decision to market their farm produce ICAR's institute "National Institute of Agricultural Economics and Policy Research (NIAP)" started a Network project of Market Intelligence in June, 2013 to provide reliable and timely price forecasts to farmers on selected agricultural commodities. The project generates price forecasts for major agricultural commodities in different parts of the country through the network of following Centres.

SL. No.	Institute Name	Commodities Allotted
	Lead Centre: NIAP, New Delhi	
	Collaborating Centres	
17.	ANGRAU, Hyderabad	Chickpea, Groundnut, Maize, Cotton , Chillies
18.	BHU, Varanasi	Tomato, Potato, Mango, Maize, Rapeseed & mustard
19.	IABM Bikaner, Rajasthan	Cumin ,Chickpea, Pearmillet, Clusterbean, Coriander
20.	CPRI, Shimla	Potato
21.	GBPUA&T, Pantnagar	Potato, Fine Paddy, Tomato, Cabbage, Vegetable Pea
22.	ICARNEH, Barapani	Ginger, Turmeric, Potato, Pineapple, Tomato
23.	IIHR, Bangalore	Onion, Tomato, Mango, Pomegranate, Grapes
24.	IIPR, Kanpur	Chickpea, Pigeonpea, Lentil, Black Gram, Green Gram
25.	JAU, Gujarat	Castor, Pigeonpea, Potato, Cotton, Groundnut, Maize
26.	JNKVV, Madhya Pradesh	Soybean, Chickpea, Maize, Mustard, Tur
27.	KAU, Thrissur	Pepper, Tapioca, Coconut
28.	OUAT, Bhubaneswar	Coconut, Cotton, Turmeric, Maize, Greengram, Ginger, Groundnut

29.	PDKV, Akola	Green gram, Pigeonpea, Onion, Maize, Soybean
30.	UAS, Bengaluru	Maize, Banana, Ragi, Redgram, Potato
31.	YSPUHF, Solan	Apple, Tomato, Pea, Ginger, Maize
32.	SKUAST, Shalimar	Apple, Walnut, Cherry, Pear

The price forecasts are disseminated to the farmers before sowing and during harvests so that informed and intelligent decisions can be taken by the farmers for acreage allocation and timing of sale of their produce. With NIAP, New Delhi, as lead Centre, the project is implemented at 16 locations with involvement of 12 State Agricultural Universities and 4 ICAR Institutes. Each centre is required to develop and disseminate pre-sowing and pre-harvest price forecasts of around five agricultural commodities selected based on the regional importance. Due care is taken to generate the dependable forecasts by using scientific techniques and also taking into consideration the farmers' and traders' perception into account. The price forecasts are disseminated to farmers using local newspaper, Television, IFFCO SMS Service, Farmers fair, special meetings with farmers, Institute Websites and display in mandis.

Ministry of Agriculture O.M. No. 7(6)/2014, dated 12th March, 2015, Department of Agricultural Research and Education

Comments of the Committee

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

FIXATION OF PRICES OF SEEDS DEVELOPED BY ICAR

Recommendation (Serial No. 19)

The Committee note that DARE alongwith other stakeholders is involved in fixing prices for Breeder Seed and Sale Rate is fixed keeping in view the production cost and considering the interest of the farming community. They have further been informed that price of foundation and certified seed is decided by respective seed

producing public agencies like NSC and respective State seed corporations, private seed companies as per the prevailing market rates and cost of production. The Committee are of view that adequate availability of seeds of good quality at reasonable price to farmers is of utmost significance for enhancing production and productivity of farm produce. Further, outcome of R&D work with public money should be available at reasonable prices to the intended beneficiaries. They find the current practice of leaving fixation of final prices of seed varieties to the private sector works, at times, against the interest of the farmers. The Committee recommend that ICAR should develop a seed bank where all varieties of seeds are available to the farmers, that is traditional seeds, newly researched seeds, hybrid seeds etc. R&D for upgraded traditional seeds with quality improvements and increased productivity should be developed by ICAR proactively. They also recommend the DARE to devise a policy for fixation of final reasonable prices of seed varieties developed by ICAR at the time of transfer of technology which are fair and within the reach of majority of small and marginal farmers in the country. Seed varieties developed by ICAR should be sold with such preconditioned appropriate clause that the farmers receive them at reasonable price. Adequate monitoring mechanism should be put in place for the purpose.

REPLY OF THE GOVERNMENT

Mandate of ICAR is to produce nucleus and breeder seed. Crop Science Division of ICAR coordinates the breeder seed production of field crops in the country with the cooperation of various SAUs and crop based institutes. The breeder seed is produced on the basis of indents received from private as well as public sector organizations placed with DAC which in turn consolidates the indents and forward to ICAR. The production of breeder seed is demand driven. Production of quality seed (foundation and certified) of various crops is primarily the responsibility of the States although ICAR institutes also produce limited quantity of certified/Truthfully Labelled (TL) seeds as they are mandated basically to carry out research and development activities. However, all possibilities will be explored to utilize the States and Central machinery including KVK to maximizing seeds/quality

planting material production. Each institute fixes the price of seed keeping in view the prevailing market price, cost of production and interest of farmers.

Ministry of Agriculture O.M. No. 7(6)/2014, dated 12th March, 2015, Department of Agricultural Research and Education

Comments of the Committee

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

OPENING OF ADDITIONAL KVKs

Recommendation (Serial No. 26)

The Committee has been informed that there is a provision of opening one KVK in each of the rural district of the country. However, in larger districts composite index ranking based on three parameters with equal weightage for ranking the districts, viz. Geographical Area, Rural Population and Net Sown Area, one additional KVK is sanctioned. The Committee note that ICAR has been able to establish only 641 KVKs in the country as on date. They also note that only 45 Districts in 10 States of the country has been able to get an additional KVKs. The Committee are of view that the provision for setting of one KVK in each rural district of the country is insufficient keeping in view large areas, number of farmers and diverse agro-climatic regions of the country. The Committee are of view that in order to disseminate information about the research, refinement of technology/products and its demonstration to maximum numbers of small and marginal farmers DARE should aim for establishment of one KVK in each rural Block of the country. Only with this level of spread, the farmers of the country would be able to receive necessary information and agricultural input necessary for making agriculture a productive profession with suitable return on their investment. The Committee, therefore, recommend the DARE to devise ways and means for establishment of one KVK in each Block of the country. They also emphasize that Department should promote training from successful farmers to other farmers i.e. farmer to farmer training as well as training 'the trainer' for far and wide reach and coverage of knowledge i.e. covering and training 67 lakh farmers.

REPLY OF THE GOVERNMENT

As Agricultural Extension is the State Subject, therefore, large scale disseminations of technologies to farmers is the responsibility of State Governments, which are operating the main extension machinery. However, the KVKs are supplementing and complementing the efforts of the State Governments by taking up the role of front line extension and providing technological back stopping to the field extension system.

As observed by the Committee, so far the Government has approved for sanctioning one KVK in each of the rural districts in the country and one additional KVK in 50 selected larger districts out of which 45 KVKs have been sanctioned. Besides, proposal has been made for approval of the Government for one additional KVK in such more 55 larger districts and 5 hilly and mountainous districts in the country during the XII Plan

As far as setting up of KVKs in each block of the country is concerned, it is stated that KVK System is an effective outreach arm of National Agricultural Research System mandated to assess and demonstrate agricultural technologies, capacity development and work as knowledge and resource centre in the district. A number of expert Committees have recommended that KVKs should work as a link between research and different development departments for fostering the technology transfer process from lab to land and work as an umbrella for all agriculture and related schemes at district level for technological backstopping. The KVK is perfectly located at district level to lead, incubate local innovations and capacity development. Setting up of KVKs at block level may lead to its involvement in non- scientific development works. KVKs are developing the capacity of Subject Matter Specialists/ members of Block Technology Teams and Farmers Friends who are involved in field extension under ATMA scheme.

Ministry of Agriculture O.M. No. 7(6)/2014, dated 12th March, 2015, Department of Agricultural Research and Education

Comments of the Committee

For comments of the Committee please refer to Para No. 1.25 of Chapter I of this Report.

CHAPTER V

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

IMPLEMENTATION OF INITIATIVES ANNOUNCED FOR XII PLAN

Recommendation (Serial No. 4)

The Committee are unhappy to note that many new initiatives such as Rural Entrepreneurship Awareness Development Yojana (READY), farmers First, Attracting & Retaining Youth in Agriculture(ARYA), establishment of Central Agricultural Universities at Bihar, Bundelkhand, and Barapani initiated for implementation during XII Plan are yet to commence nearly three years after the commencement of the Plan. The Committee have been informed that the pace of progress of these initiatives has been affected due to reduced allocations to the DARE. They have been informed that the proposal relating to some initiatives such as READY & ARYA are pending before the Ministry of Finance and CCEA respectively. The Committee have been assured that these proposals will be implemented soon after getting the approvals. Similarly, formalities for establishment of CAU Bihar and Barapani have been initiated. The Committee deplore the slow pace of work in implementation of new initiatives during the XII Plan. The Committee are of the view that preliminary work for implementation of these schemes and the proposals for approval should have been completed well in time. The Committee desired that requisite formalities for launching these schemes/projects should be completed without further loss of time and it should be ensured that implementation is taken up during the current financial year so that intended benefits planned under these schemes are available in time.

REPLY OF THE GOVERNMENT

The Rani Lakshmi Bai Central Agricultural University, Bundelkhand has started classes for the B.Sc. (Hons.) Agriculture course from the year 2014-15. The Memorandum of Understanding (MoU) has been signed between Government of

Bihar and Union Government to convert Rajendra Agricultural University (RAU), Samastipur, Bihar to Central Agricultural University (CAU). As far as Central Agriculture University (CAU), Barapani is concerned, two States i.e. Nagaland and Meghalaya are to be covered under this. This includes establishment of colleges in Meghalaya and Nagaland. The EFC of CAU, Imphal has been approved by the Union Government in which budget allocation for the colleges to be established in these states have been approved in the XII Plan. The Government of Meghalaya has been requested for acquiring the additional 20 acres of land, in contiguity to the 20 acres which has already been identified for the College of Post Graduate Studies, Umiam, under Central Agricultural University, Imphal. The preparation of the EFC of CAU, Barapani and the draft Bill for parliament is in process.

The new initiative such as Farmers FIRST is a part of the KVK Scheme and its Cabinet Note is under process. The project will be implemented as soon as it is approved by the Government. Student READY (Rural Entrepreneurship Awareness Development Yojana) is part of the scheme “Strengthening and Development of Higher Agricultural Education in India,” and its cabinet note is under process. The scheme ARYA (Attracting & Retaining Youth in Agriculture) has been approved in the XII plan EFC of ‘National Agricultural Innovation Foundation’ and the work has already started.

Ministry of Agriculture O.M. No. 7(6)/2014, dated 12th March, 2015, Department of Agricultural Research and Education

Comments of the Committee

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

NATIONAL ACTION PLAN TO CONTROL THE MENACE OF PARTHENIUM GRASS

Recommendation (Serial No. 15)

The Committee note that problem of unabated growth of 'parthenium' in large parts of the Country is affecting availability of fodder for cattle, thereby directly affecting the health of livestock/cattle as also income of farmers. They note that mechanical, chemical and biological methods are available for management of growth of parthenium grass. The Committee have been apprised that Directorate Of Weed Science Research (WSR) has developed a cheap technology for mass multiplication of a bio agent called 'zygogramma bicolorata' which helps to lower down the impact of parthenium and the Weed Science Research has made efforts to spread awareness about practices to control spread of parthenium. They have also been informed about need of large scale efforts on the analogy of 'Swachya Bharat Abhiyaan' to control the menace of parthenium grass. The Committee, therefore, recommend to the Government to frame a concrete action plan to spread awareness about the technology on a country wide scale to control the unabated growth of parthenium and other exotic weeds affecting availability of fodders to the cattle. The Committee, strongly, recommend the DARE to frame a co-ordinated action plan in this regard in consultation with DAC and Ministry of Rural Development under intimation to the Committee of the outcome. The Committee also recommend that the Department should find out feasibility of using the method of spraying the salt water on parthanium.

The Committee urge the Department to probe the possibility of relating and integrating this action plan to control parthenium and the use of bio-agent to control on the road sides which are left unattended with 'Mahatma Gandhi National Rural Employment Guarantee Act' Schemes by involving the unemployed labour in using the technology for the same. They also emphasize that awareness should be enhanced for proper results.

REPLY OF THE GOVERNMENT

Efforts have been made at Directorate of Weed Research, Jabalpur (DWR) to manage *Parthenium* by mechanical and manual, cultural, chemical and biological management methods. Biological control of parthenium through a leaf feeding bioagent *Zygogramma bicolorata* has been successful. As part of the integrated management approach, in the waste lands and on the sides of roads and railway tracks, replacement of parthenium by competitive plants like *Cassia tora* and *C. sericea* has been recommended.

DWR probed the feasibility of spraying salt water on parthenium for its control. Salt water (15-20%) kills small and succulent plants but the mature plants escape. Two to three salt spraying will be required in a year for complete control as parthenium which has the ability to grow throughout the year, and it may also result in soil salinity problems. Therefore, instead of salt, herbicides in low dose will be more effective to manage parthenium under integrated approach.

DWR has been observing 'Parthenium Awareness Week' involving State Agricultural Universities (SAUs), Krishi Vigyan Kendra (KVKs), ICAR institutes, and many NGOs, schools, colleges, etc. To facilitate successful implementation of the programme, DWR published posters, extension pamphlets and made video films on parthenium and distributed among the stakeholders in addition to publishing research and popular articles, bulletins and books on management of parthenium. From 2014 onward, DWR is appealing to all KVKs, SAUS and ICAR institutions to make their campus parthenium-free by adopting regular management practices.

Apart from this, as suggested by the Committee, the department has communicated the recommendation to create awareness about practices to control parthenium to the Department of Agriculture and Cooperation to sensitize them on the menace of parthenium as well as solicited their cooperation to help bring out an action plan. The Ministry of Rural Development (MoRD) also has been requested for required interventions under MGNREGA. Responses from these government agencies are awaited.

Ministry of Agriculture O.M. No. 7(6)/2014, dated 12th March, 2015, Department of Agricultural Research and Education

Comments of the Committee

For comments of the Committee please refer to Para No. 1.16 of Chapter I of his Report.

**NEW DELHI;
07 August, 2015
16 Shrawana, 1937 (Saka)**

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

COMMITTEE ON AGRICULTURE

(2014-15)

MINUTES OF THE THIRTY FIRST SITTING OF THE COMMITTEE

The Committee met on Thursday, the 6th August, 2015 from 1000 hrs. to 1040 hrs. in Room No. 138 (Third Floor), Chamber of the Chairperson Parliament House, New Delhi.

PRESENT

Shri Hukm Deo Narayan Yadav – Chairperson

MEMBERS

LOK SABHA

2. Shri Sanganna Amarappa
3. Prof. Ravindra Vishwanath Gaikwad
4. Shri Nalin Kumar Kateel
5. Md. Badaruddoza Khan
6. Shri C. Mahendran
7. Dr. Tapas Mandal
8. Shri Dalpat Singh Paraste
9. Shri Mukesh Rajput
10. Shri Satyapal Singh

RAJYA SABHA

11. Smt. Renuka Chowdhury
12. Mohd. Ali Khan
13. Shri Darshan Singh Yadav

SECRETARIAT

- | | | | |
|----|--------------------|---|------------------|
| 1. | Shri Abhijit Kumar | – | Joint Secretary |
| 2. | Shri N.K. Pandey | - | Director |
| 3. | Shri C.Vanlalruata | – | Deputy Secretary |
| 4. | Shri Sumesh Kumar | – | Under Secretary |

2. At the outset the Chairperson welcomed the members to the Sitting of the Committee. The Committee, then, took up the following draft Reports:

- I. *****
- II. *****
- III. Memorandum No. 9 pertaining to the Draft Action Taken Report on recommendations/observations contained in the 2nd Report of the Committee on Agriculture (2014-15) on 'Demands for Grants (2014-15)' of Ministry of Agriculture (Department of Agricultural Research & Education); and
- IV. *****

3. After some deliberations, the Committee adopted the draft Reports without any amendments and authorized the Chairperson to finalise the Reports and present the same to Parliament.

The Committee then adjourned.

****Matter not related to this Report.***

ANNEXURE

(Vide Para 4 of Introduction of the Report)

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

(i)	Total number of Recommendations	30
(ii)	Recommendations/Observations which have been Accepted by the Government	
	Serial Nos. 1, 2, 3, 5, 6, 8, 9, 10, 11, 12, 13, 14, 17, 18, 20, 21, 22, 23, 24, 25, 27, 28, 29 and 30	
	Total	24
	Percentage	80.00%
(iii)	Recommendations/Observations which the Committee Do not desire to pursue in view of the Government's replies	
	Total	NIL
	Percentage	0%
(iv)	Recommendations/Observations in respect of which replies of the Government have not been accepted by the Committee	
	Para Nos. 7, 16, 19 and 26	
	Total	4
	Percentage	13.33%
(v)	Recommendations/Observations in respect of which Final replies of the Government are still awaited	
	Para Nos. 4 and 15	
	Total	2
	Percentage	6.66%