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COMMITTEE ON AGRICULTURE
(2012-2013)

FIFTEENTH LOK SABHA

MINISTRY OF AGRICULTURE
(DEPARTMENT OF AGRICULTURAL RESEARCH AND EDUCATION)

DEMANDS FOR GRANTS
(2013-14)

FORTY SEVENTH REPORT

LOK SABHA SECRETARIAT

NEW DELHI

APRIL, 2013 / VAISAKHA, 1935 (Saka)

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Presented to Lok Sabha on 23.04.2013

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3. **Shri Sanjay Singh Chauhan**
4. **Shri H.D. Devegowda**
5. **Smt. Ashwamedh Devi**
6. **Shri L. Raja Gopal**
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SECRETARIAT

1.	Shri R.S. Kambo	-	Joint Secretary
2.	Shri R.S. Negi	-	Committee Officer

INTRODUCTION

I, the Chairman, Committee on Agriculture, having been authorized by the Committee to submit the Report on their behalf, present this Forty-seventh Report on the Demands for Grants (2013-2014) of the Ministry of Agriculture (Department of Agricultural Research & Education).

2. The Committee under Rule 331E (1)(a) of the Rules of Procedure considered the Demands for Grants (2013-14) of the Department of Agricultural Research & Education which were laid in Lok Sabha on 19 March, 2013. The Committee took evidence of the representatives of the Department of Agricultural Research & Education, Indian Council of Agricultural Research and Planning Commission at their Sitting held on 01 April, 2013. The Committee wish to express their thanks to the officers of the Department of Agricultural Research & Education, ICAR and Planning Commission for appearing before them and for furnishing the information they desired in connection with the examination of Demands for Grants of the Department.

3. The Report was considered and adopted by the Committee at their Sitting held on 17 April, 2013.

4. For facility of reference, the Observations/Recommendations of the Committee have been printed in bold at the end of each Chapter of the Report.

NEW DELHI;
17 April, 2013
27 Chaitra, 1935 (Saka)

BASUDEB ACHARIA
Chairman,
Committee on Agriculture

ABBREVIATIONS

AICRP	All India Coordinated Research Project
APCAEM	Asia and Pacific Centre for Agricultural Engineering and Machinery
ATMA	Agricultural Technology Management Agency
ARYA	Attracting & Retaining Youth in Agriculture
ASRB	Agricultural Scientists Recruitment Board
BE	Budget Estimates
BPD	Business Planning and Development
CAFT	Centres of Advanced Faculty Training
C& AG	Comptroller & Auditor General
CAU	Central Agricultural University
CERA	Consortium for e-Resources in Agriculture
CIAE	Central Institute of Agricultural Engineering
CIFE	Central Institute Fisheries Education ..
CISH	Central Institute for Subtropical Horticulture
CPCRI	Central Plantation Crops Research Institute
CRP	Consortia Research Products
CSWCR & TI	Central Soil & Water Conservation Research Training Institute
CU	Central University
DAP	Depend on Animal Power
DARE	Department of Agricultural Research & Education
DFR	Directorate of Floriculture Research
DU	Deemed-to-be-university
EFC/SFC	Expenditure Finance Committee/ Standing Finance Committee
GDP	Gross Domestic Products
GEF	Global Environment Fund
HRD	Human Resource Development
IARI	Indian Agricultural Research Institute
IMC	Institute Management Committee
ICAR	Indian Council of Agricultural Research
IGFRI	Indian Grassland and Fodder Research Institute
IRC	Institute Research Committee
IVRI	Indian Veterinary Research Institute
JRF	Junior Research Fellowship
KVASU	Kerala Veterinary and Animal Sciences University
KVK	Krishi Vigyan Kenda

LCC	Leaf Colour Chart
MoF	Ministry of Finance
MIS	Management Information System
NAARM	National Academy of Agricultural Research Management
NAEP	National Assessment of Education Programme
NAIP	National Agricultural Innovation Project
NARS	National Agriculture Research System
NDC	National Development Council
NGO	Non-Governmental Organization
NIASM	National Institute of Abiotic Stress Management
NIAB	National Institute of Agriculture Biotech
NIBSM	National Institute of Biotic Stress Management
NBSS&LUP	National Bureau of Soil Survey and Land use Planning
NICRA	National Initiative on Climate Resilient Agriculture
NISAGENET	National Information System on Agricultural Education Network
NIRJAFT	National Institute of Research on Jute and Allied Fiber Technology
NFBSFARA	National fund for Basic Strategic and Frontier Application Research in Agriculture
NPCC	National Project on Climate Change
NRCAF	National Research Centre for Agroforestry
NRM	National Resource Management
PAO	Pay and Account Office
PG	Post Graduate
PHT	Post Harvest Technology
RAC	Research Advisory Committee
RE	Revised Estimates
RES	Regional Engineering Services
RMP	Research Management Position
RKVY	Rashtriya Krishi Vikas Yojana
SRF	Senior Research Fellowship
SAU	State Agricultural Universities
SOC	Senior Officers' Committee
SMD	Subject Matter Division
SRI	System of Rice Intensification
UG	Under Graduate
VPKAS	Vivekananda Parvatiya Krishi Anusandhaan Sansthan

CHAPTER – I

IMPLEMENTATION OF THE COMMITTEE'S RECOMMENDATIONS

The Thirty- second Report of the Committee on Agriculture on Demands for Grants (2012-13) of the Ministry of Agriculture (Department of Agricultural Research & Education) was presented to Lok Sabha on 25 April, 2012 and laid on the Table of Rajya Sabha on 26 April, 2012. The Report contained 28 Observations / Recommendations.

1.2 The Minister concerned is required to make Statement under Direction 73-A of Directions by the Speaker, Lok Sabha about the status of implementation of Recommendations contained in the Original Report of the Committee within six months of presentation of Report to the Parliament. Statement under Direction 73-A in the context of the Thirty-second Report was made by the Minister of Agriculture in time.

1.3 On the basis of the Action Taken Notes received from the Department of Agricultural Research & Education in respect of the Thirty- second Report, the Committee presented their Fortieth Report to Lok Sabha and laid on the Table of Rajya Sabha on 20 December, 2012. The Committee commented on the Action Taken Notes furnished by the Department in respect of Recommendations at Para Nos. 1.4,2.62,2.64,2.65,2.66,2.68,2.70,2.71,2.76,3.31,3.33,3.37 and 3.38 of the Thirty- second Report. An analysis of the Action Taken Notes revealed that the Government have accepted 57% Recommendations of the Committee. 29% Recommendations have not been accepted by the Government thus requiring reiteration. Replies in case of 14% Recommendations are of interim nature.

1.4 The Committee note that the Action Taken Replies regarding the action taken by the Government on the Observations / Recommendations contained in the Thirty-Second Report of the Committee were furnished by the Government within the stipulated three months and the Statement of the Minister under Director 73-A was made within the stipulated six months period. An analysis of the action taken by the Government reveals that 57% Recommendations have been accepted, 29% Recommendations have not been accepted and 11% of Recommendations are in the various stages of implementation. While the Committee hope and trust that the Department will continue to adhere to the stipulations laid down under Direction 73-A in future, in letter and spirit.

CHAPTER II

NEW CHALLENGES IMPACTING AGRICULTURAL SECTOR

2.1 Indian Agriculture saw growth in all its dimensions during the year 2011-12 with a record production of foodgrains, fruits, vegetables, milk, meat, eggs and fish. The agriculture and allied sectors achieved a compound growth rate of 3.3% during the XI Five Year Plan which is higher than the 2.4 per cent registered in the X Five Year Plan. The year 2012 saw intense activity for the Indian National Agricultural Research and Education System (NARES), in terms of completion and consolidation of programmes of the XI Five Year Plan, Indian Agriculture is posed by challenges, with an erratic monsoon, drought-like situation in some parts of the country as also cyclones impacting agriculture. The technological backstopping by the ICAR institutes helped the farmers in their efforts to overcome the impact of these natural calamities.

2.2 Land Degradation, Deterioration of soil Health, Low Falling Productivity and Profitability of Small Land Holdings, Low Water Productivity, Productivity of Rainfed/Dryland Agriculture, Declining factor productivity of Intensive Agriculture, Impact of Climate Change on Agriculture, are some of the new challenges, impacting Agricultural Sector. The Committee when asked the extent to which the Department has geared itself to overcome these challenges, the Department informed that various ICAR Institutes and Project Directorates are undertaking research and developed appropriate technologies to overcome the upfront. Their details is as follows:

(i) Land Degradation: This is one of the major problem of rainfed/dryland regions of the country. The Council through Central Soil and Water Conservation Research and Training Institute, Dehradun and Central Arid Zone Research Institute, Jodhpur is addressing all issues related to

water & wind erosion respectively. The institutes suggested several location specific bio-engineering measures of soil and water conservation to tackle soil erosion and organize training for popularizing various erosion control measures. The problems of salt affected and water logged soils are being addressed by Central Soil Salinity Research Institute, Karnal through All India Coordinated Research Project on Salt Affected Soils. The institute has developed cost effective reclamation measures and evolved salt tolerant varieties. These institutes organize trainings for popularizing various land management practices.

(ii) Deterioration of Soil Health: The Council through Indian Institute of Soil Science including four All India Coordinated Research Projects namely Long-Term Fertilizer Experiments, Soil Test Crop Response, Micro, Secondary & Pollutant Element and Soil Biodiversity & Biofertilizers are generating site specific balanced & integrated nutrient management practices to maintain soil health & quality with due consideration of farmers' resource availability. Enhancement of nutrient use efficiency is also being addressed through development of efficient urease and nitrification inhibitors and coating material, conservation agriculture, resource conservation technologies (RCTs), biofortification, fertigation and integrated water & nutrient management and nanotechnological interventions.

(iii) Low Falling Productivity and Profitability of Small Land Holdings : In order to systematically integrate multi-enterprise systems, the Council through Project Directorate on Farming System Research, Modipuram has initiated an AICRP on Development of Integrated Farming System (IFS) models for small and marginal farmers of different agro-ecological zones in the country during XI Plan for enhancing the productivity, profitability and livelihood of farming community particularly with respect to small and marginal farm holdings. The project is being further strengthened during the current Plan. The ICAR Research Complexes for Eastern Region and NEH region and NRC Agro-forestry are also engaged in such endeavor.

(iv) Low Water Productivity: The Council through Directorate of Water Management, Bhubaneswar including AICRPs on Water Management and Ground Water Utilization is giving emphasis on water harvesting, conservation and storage, integrated use of surface groundwater including waste water and multiple use of water in order to enhance water productivity. Technologies for increasing water and irrigation use efficiencies are also being addressed. Besides, training of trainers and farmers is being conducted under Scaling up of Water Productivity in agriculture for livelihoods through teaching cum demonstration.

(v) Productivity of Rainfed/Dryland Agriculture : The Council through Central Research Institute for Dry land Agriculture, Hyderabad, Central Arid Zone Research Institute, Jodhpur, Central Soil and Water Conservation Research & Training Institute, Dehradun and Centres of All India Coordinated Research Projects on Dry land Agriculture and Agro-meteorology and National Initiative on Climate Resilient Agriculture(NICRA) is providing requisite technology support for optimizing crop productivity of dry land/ rainfed farming in arid and semi arid regions through efficient crop planning including agroforestry, development of short duration drought resistant varieties, intercropping, rain water harvesting & storage for supplementary irrigation, integrated watershed management, micro irrigation, land management, integrated nutrient management and short/medium range weather forecasting and contingent crop planning.

(vi) Declining Factor Productivity of Intensive Agriculture: The Council has recommended various measures like judicious use of water & fertilizers through integrated water & nutrient management. The activities for enhancing soil health and water productivity will contribute towards enhancing factor productivity of water and nutrients.

(vii) Impact of Climate Change on Agriculture: The Council has initiated a Network project entitled National Initiative on Climate Resilient Agriculture (NICRA) to enhance resilience of Indian agriculture to climate change and climate vulnerability through strategic research and technology demonstration. Capacity Building and Sponsored/Competitive Grants. Climate resilient technologies are being demonstrated in four modules across vulnerable districts in selected villages representing all states of the country. Cultivars are also being tested for climate resilient attributes. Besides, training programmes for scientific personnel and farmers' awareness programmes on climate resilient agriculture are being organized.

2.3 Explaining the rationale, to tackle frontier research, Secretary, DARE during evidence stated :-

"the challenge today is enhancing input use efficiency, water efficient crops, the abiotic stress that we talked of. We need absolutely an anticipatory research. Earlier it used to be some kind of an adaptive research. That is no more possible. The canvas is very difficult and different. We need to have original research in our agro ecological conditions brought up. For that, we absolutely need technology-led agriculture, science inputs in greater measures which require absolutely

investments of that kind. We have brought up these things. Our research process would be delayed if we do not invest, if we do not have inputs in the right time. xxxx xxxx xxxx We have also said how critical the technology input into our productions systems is whether of crops or animals. xxxx xxxx xxxx So we have brought up again all these challenges, climate resilient agriculture, pre-season farming that is required and all those new scientific methods. xxxx xxxx xxxx.

xxxx xxxx xxxx. We need higher allocations to do that kind of competitive science anywhere in the world. At the same time what we need to do, given the conditions, is a good priority decision. Otherwise we would not be doing a good job. xxxx xxxx xxxx. But then, in the long-term, if we do not get adequate funds and if we do not invest at the right time then there will be a long-term impact.

2.4 While briefing the Committee during oral evidence the Secretary, DARE stated as follows :-

"xxxx xxxx xxxx Whatever we invest in agriculture research, R&D, for every rupee we invest, the returns are to the extent of Rs.13.50, which is much higher than any other sub-sector in this country, and any other country in agriculture R&D. This is the strength of technology component contribution in our production process."

2.5 The Department in Post Evidence Note, referred to study conducted with regard to impact of investment in Agricultural Research and Education. As per this Study, the Committee was informed that agriculture spending in Research and Development, generally, has the largest positive effects on growth and poverty reduction. In many cases government agricultural spending in R&D has contributed substantially to agricultural productivity, rural household income, rural household consumption and rural poverty reduction. For each unit of local currency spent on the agricultural, on average 11 local currency units are returned in term of increased agricultural productivity or income across the Asian countries studied. Investment in agricultural R&D have substantially reduced rural poverty by

stimulating agricultural growth and reducing food prices. Returns in Public Spending in Asia and Africa are as follows :-

Sector	China	India	Thailand	Ghana	Uganda	Tanzania	Ethiopia
Returns to agriculture or rural income							
(Local currency/local currency spending)							
Agric. R&D[a]	6.8	13.5	12.6	16.8	12.4	12.5	0.14
Education	2.2	1.4	2.1	-0.2	7.2	9	0.56
Health	n.e.	0.8	n.e.	1.3	0.9	n.e.	-0.03
Roads	1.7	5.3	0.9	8.8	2.7	9.1	4.22
Ranking in returns to poverty reduction							
Agric. R&D	2	2	1	n.e.	1	2	n.e.
Education	1	3	3	n.e.	3	1	n.e.
Health	n.e.	4	n.e.	n.e.	4	n.e.	n.e.
Roads	3	1	2	n.e.	2	3	n.e.

Source: Fan, Mogues, and Benin (2009)

[a]This refers to agricultural spending in R&D except in Ethiopia and Ghana, where it is agricultural spending aggregated across subsectors.

In regard to position in India, the study mentions that “looking more closely at India, the results also show that about 13.5 rupees are returned for every rupee invested in agricultural R&D. This finding has important policy implication for India”.

2.6 The Committee also took note of another study on the quantifying indicators. The outcome of research using various outcomes of Research attributed in study can be quantified by using the following indicators:

1. Decline in real cost of production
2. Increase in productivity and farm income
3. Increase in food and nutritional security
4. Reduction in incidence of poverty and hunger
5. Reduction in post harvest losses
6. Improvement in input use efficiency
7. Improvement in environment or quality of natural resources

Further, as per the policy paper on " Total Factor Productivity and Contribution of Research Investment to Agricultural Growth in India" published by National Centre for Agricultural Economics and Policy Research, the Specific Contribution of Research to Crop Output in terms of quantity and value can be described as under.

> Share of TFP growth in output growth has been estimated to be in the range of 10.1% for R&M to 58.9% for wheat (vide Table 1). The share of research in TFP growth has been estimated as 55.7% for rice, 40.1% for wheat, 79.2% for maize, 27.8% for jowar, 74.8 % for bajra, 42.2% for gram, 36.0% for groundnut, 88.6% for R&M and 26.4% for cotton. These two sets of numbers were multiplied to arrive at the contribution of research to production growth. Based on these estimates it was found that around one fourth growth in output of wheat and cotton, one fifth in the case of bajra and around 13 percent in paddy and maize was due to investments in research and education. In most of the other crops about one tenth of output growth was taking place due to public sector research, the lowest being 6.6 percent in the case of jowar.

(A) SOIL HEALTH

2.7 The Agriculture sector is also beset with the problem of land degradation, including problems of soil and water erosion. Bio engineering measures of soil and water conservation, organizing training for popularization of appropriate technologies is pre requisite for controlling erosion. Salt affected and water logged soil too needs to be addressed. Ground water imbalances, impaired soil health and contamination of food chain and environment pollution too impact agriculture sector.

2.8 Inventory of soil resources, soil maps, etc. are basic tools to address the problems associated with the soil. When the Committee asked about inventory of soil resources, soil fertility map, water erosion etc. the Department in Post Evidence reply has stated that NBSS&LUP has undertaken soil resource inventory for 55 districts of the country. The Central Soil and Water Conservation Research

and Training Institute (CSWCR&TI), Dehradun has prepared potential water erosion maps showing different erosion classes for all states (and not of districts) except Mizoram in collaboration with National Bureau of Soil Survey and Land Use Planning (NBSS&LUP), Nagpur.

2.9 Further, geo-referenced soil fertility maps (macro and micro-nutrients) for 152 districts have been prepared out of 171 selected districts based on discussion with Department of Agriculture & Cooperation, Ministry of Agriculture by Indian Institute of Soil Science (IISS), Bhopal. Soil fertility maps of remaining 19 out of 171 selected districts will be completed by September 2013.

2.10 Besides, NBSS&LUP Nagpur has prepared soil fertility maps both micro and macro nutrients of the 57 districts on demand and financed by state Govt.

(a) West Bengal (all 18 districts)
(b) Assam (all 13 districts)
(c) Jharkhand (all 22 districts)
(d) Tripura (all 4 districts)

Similar maps are being prepared for Sikkim (4 districts), Nagaland (11 districts) and Kerala (all districts).

2.11 NBSS & LUP is engaged in preparation of soil resource maps alongwith various interpretative maps at district level with due consideration of land situations, soil types, water availability, agro-ecosystem and various socio-economic conditions.

2.12 Based on these, soil-site suitability of various crops in different districts have been formulated for use at district/taluka level. For developing viable, scientific and sustainable land use planning at farm or village level, detailed characterization and

mapping of soil & water resources, climatic parameters, land use, socio-economic conditions, infrastructure, marketing facilities etc is a prerequisite. Presently, such cadastral level digital database at 1:10,000 scale is not available in the country.

2.13 During Oral Evidence, Secretary DARE while briefing the Committee stated that they have soil nutrient mapping, fertility mapping of all the districts but work on geo-referenced maps is under way. The Department has completed geo-referenced for major nutrients and micro-nutrients of 62 districts and in the XII Plan a target of 300 districts contemplated. He further added :-

> "I must mention today we have 62 districts completely geo-referenced for everything both major nutrients and micro-nutrients. Our endeavour is to go in for two more things.
>
> One is to have a good geo-referenced map for the micro-nutrient is becoming a bigger issue now. The major nutrients are known nitrogen, potash and all that. So, in the 12th Plan, a greater emphasis would be laid on geo-referenced. We will complete 300 districts in the 12th Plan.
>
> I must mention that on 16th March, 2013, there was a very high level meeting at the Indian Space Research Organisation coordinated by the Hon. Member, Planning Commission. All the Secretaries were there from the Agriculture, me from ICAR and members from the National Remote Sensing Agency. We all have an agreed on Action Plan and also about the satellite imageries, the band-width that we require to be more precise. We have also placed our requirements. So, they also have to look into some certain things. The recent satellite pictures also that are available would be shared. There were some concerns on that also. All these were discussed. So, the way forward in the 12th Plan is an inter-departmental and inter-ministerial effort to have this mapped at the cost of repetition with geo-referencing.
>
> I would like to again mention that both ATMAs and soil health cards are being dealt by the Department of Agriculture & Cooperation. There would be submission but from both of them, I would like to say that we have been discussing these issues. So, the 12th Plan would see a better coverage, a comprehensive coverage because everytime the satellite imageries will be improved with regard to band-width. When they send out satellites, they take our requirements. In fact that day, it was basically a client meeting what all we want from them including the Oceansat and so on. So, we have placed our

requirements. I think in the 12th Plan, many of them would be enabled".

(B) SMALL AND MARGINAL FARMERS

2.14 Supplementing further, the Secretary, DARE apprised the Committee that ICAR aims to invest heavily in R&D so as to reduce production cost. Efforts are also underway to make the profession remunerative specially for small and marginal farmers. He stated :-

"xxxx xxxx xxxx I must say that it is absolutely on our agenda making agriculture remunerative, profitable and so on. I just want to submit two or three things. One is that we have been working on the total factor productivity. In that context, we have worked out what is possible in reducing the cost of cultivation. We brought it out in the policy document for Agriculture Research. In that we have clearly shown there is a reduction of one to 2.5 per cent in the cost of cultivation every year from rice, wheat to pulses and oil seeds in the last 30 years. This is what we have documented - the reduction in cost of cultivation is ranging from 1 to 2.5 per cent. We have published it. This is mainly because of the technologies we have developed starting from water conservation, varietal introduction health pest control to final harvesting mechanization. All these were included and the cost of cultivation has reduced.

Second, xxxx xxxx xxxx. We have brought out very clearly three crops in one year – a cereal, a paddy and a legume. Now we have got summer moong in just about 65 days crop after which, they can go for another crop.

xxxx xxxx xxxx. We have developed 300 farming system models for the whole country to suit different agro-climatic zones. We think that the labour cost is another major problem in the last five to six years. Earlier, it used to be the seed cost. Purchasing seed, fertilizer, irrigation was earlier costly but recent projections also show that labour is also very expensive. In a State like Kerala, it could be Rs. 650 per day.

xxxx xxxx xxxx, the major emphasis in the plan would be on farm mechanisation. You have talked of small farms. People say that why do we not import implements. Looking into this, very very customised farming implements are required. We are happy to report that drip irrigation is there in the State of Rajasthan. Earlier, we had never heard of this. Now drip irrigation is becoming a common thing. We are going to start with that. Second is the small implements that can be suitable for half an acre size. Next is custom hiring. Earlier, people never talked of this. So, a set of implements given to a village level and this is what we are doing. We are

seeing what is the minimal of farming implements available. Similarly, we are talking of minimum processing facilities. So, farming implements you have given; customised thing has worked with success. The next thing is about the minimal processing facilities. xxxx xxxx xxxx, the next point is with regard to cluster farming. We are now trying with bore well for irrigation. In Andhra Pradesh for example, each one is going in for that. Earlier, we had demonstrated 140 people coming together and going in for one or two single bore. This is the way forward for cluster farming. xxxx xxxx xxxx. In cluster farming, buy inputs together, manage the crop and go to the market. This is what is required. The issue of small farmers is absolutely in the agenda. This would work out the overhead cost and will reduce the cost. This is what we are trying to experiment in cluster farming in different locations".

2.15 Dominance of small and marginal farmers with very small land holdings, results into low in productivity and profitability. When asked about appropriate technology developed to take care of them, the Department in a note furnished to Committee stated that the Council has initiated an AICRP on Integrated Farming System (IFS) for small and marginal farmers of different agro-ecological zones to increase productivity and profitability. Such multi-enterprise system involves crops, horticulture, agroforestry, livestock, fisheries, poultry, piggery, mushroom cultivation and bee-keeping and has the potential to increase productivity by 2 to 7 times. Few salient examples are listed below:

- Crop-dairy based farming system for small farm families of Bihar having 1 acre of irrigated land and four crossbred cows.
- Watermill based integrated farming system for north western Himalayas.
- Trench cum raised bed based horticulture-fish farming system for seasonally waterlogged areas of Bihar.
- Multi-enterprise farming system model for reclaimed sodic lands.
- Rice, coconut and rabbit based integrated farming system for Western Ghats.

  Rainfed farming system model with 1.15 ha area for small and marginal farmers in Telangana region of AP.

Short duration, biotic and abiotic tolerant varieties/hybrids of rice, wheat, maize, pearl millet, sorghum, pulses, oilseeds and commercial crops have been

developed for enhancing the cropping intensity and thereby production per unit land of small and marginal farms across the country. Besides, profitable intercropping systems in commercial crops along with oilseeds and pulses have been developed for rainfed tracts catering to small and marginal farmers.

Rice-based integrated farming systems (IFS): Generic IFS models have been developed by the CRRI, to judiciously integrate cropping with related agricultural enterprises like horticulture, fish, poultry, ducks, pigs, sericulture, mushroom culture, bee keeping, farm woodlots, suitable for different agro-climatic and socio-economic conditions.

- System of Rice Intensification (SRI) with main components- alternate wetting and drying and leaf colour chart (LCC) based nitrogen management is a method of rice cultivation that cut down the cultivation cost. Cultivation of aerobic rice is another important method of growing rice with low water requirement.

- For technological up gradation of farm operations of small and marginal land holders, Central Institute of Agricultural Engineering (CIAE) Bhopal has designed and fabricated several implements/equipments for different farm operations (tillage, sowing, weeding, harvesting etc.) and post harvest practices (cleaning, shelling/dehulling etc.). These implements/equipments are useful for small and marginal farmers in reducing the drudgery in farm operations.

- VPKAS has designed and commercialized small farm implements and tools suitable for mechanization of agriculture in hills. Vivek Millet Thresher, VL Paddy Thresher, VL Seed-cum-Ferti drill, VL Syahi Hal and other small farm implements have helped tremendously to reduce the drudgery in the related operations

Farming system and cropping system approach for sustainable use of farm resources and reduced risks have been successfully demonstrated in perennial horticulture. Various farming system models have been developed and suitable crops in earlier year of tree plantation to maximize the output in different agro-climatic conditions have also been developed.

2.16 Horticulture is best option for diversification and system productivity for small holdings, they can grow high value crops, flowers, medicinal and aromatic plants under protected cultivation, mushrooms, bee farming and post harvest processing and preparation of value added items.

2.17 To enable the poor and marginal fish farmers/fishermen for their economic empowerment, the technologies with slight modifications will create opportunities like small scale aqua farming in pond, seed production, coastal aquaculture , marine and inland aquaculture, mussel farming, oyster farming, poly-lined pond culture systems for hill areas and technology for ornamental fish culture. The aqua farming will improve the economic status of the poor and marginal fish farmers. Open sea cage farming is another technology where demonstration have been conducted with active participation of fishermen in different regions of east and west coast of India. Hygienic fish drying/ smoking technologies and value addition to low value fishes is helping poor farmers fetch more price for their commodity. The institutions in the Fisheries Division are imparting suitable training in all these activities.

2.18 Sustainable development, climate change, bio-security, bio-safety are some of the upfront areas requiring detailed research. The development of appropriate technology for conservation management and sustainable utilisation of natural resources, to ensure food, nutritional and environmental security; deteriorating productivity of resources, profitability of small land holdings, dry-land agriculture, farm mechanisation etc. are some of the challenges confronting Indian agriculture. Many of the challenges have there been in the past and some owe their genesis to fast changes contemporary scenario. Some of the challenges have been tamed and very long distance ought to be travelled before the new and novel manifestations are win over. The technology-driven agriculture with farmers' centric approach calls for anticipatory research of various agro-ecological conditions instead of adaptive research. Recent empirical studies have revealed that investment in Agriculture Research and Development is one of the factors contributing to substantially reduction in rural poverty by stimulating agriculture growth and reducing food prices, globally. In the Indian context, results have shown that about 13.5 rupees are returned for every rupee invested in Agriculture Research and Development. Another study to quantify outcome of research, found that around ¼ growth in output of wheat and cotton, 1/5th in case of bajra and 13% in paddy and maize, were due to toil and labour put by research and development works. The primacy of agriculture R&D in the development process is second to none. The Committee desire that investment in Agriculture R&D be stepped up, so as to obtain high returns, further the Committee trust and hope that the Indian scientists and technocrats will continue to strive hard, as before and overcome the

challenges besetting Indian agriculture, on war footing, by developing appropriate mitigating strategies & technology, for the benefit of farmers.

SOIL MAPPING

2.19 Inventory of soil resources including soil map is one of the basic tool as it guides suitability of various crops. Keeping the farmers constantly updated of soil health profile, mapping and geo-reference database of micro and micro-nutrients play a major role in improving the agriculture production in the Country. The Committee are concerned to find that geo-referenced soil fertility maps for only 152 districts have been prepared out of 171 selected districts and remaining 19 districts are likely to be completed by September, 2013. The Department has been assigned a target of 62 districts in the current fiscal and 300 Districts in the XII Five Plan. The Department is working with other organizations like Indian Space Research Organisation, National Remote Sensing Agency etc. in close tandem. Since the geo-reference database help in working out the exact nutrient requirement especially micro-nutrients of a crop in the field, the Committee, therefore, desire that the Department to review their targets and complete geo-reference of all the 600 odd Districts in the Twelfth Five Year Plan itself. They further desire the Department to work out the additional financial requirement needed for completion of major and micro nutrients geo-reference map and prevail upon the Planning Commission and the Government to liberally fund the project during the current Five Year Plan period.

SMALL AND MARGINAL FARMERS

2.20 In a country, where a large section of the farmers are small and marginal with low land holdings, inadequate purchasing power and lack of access to credit and extension services, it is but desirable that appropriate farm technologies to cater to their specific needs, be evolved. It is a matter of great relief that the Council has initiated an AICRP on Integrated Farming System for small and marginal farmers of different agro-ecological zones to increase productivity and profitability. The multi-enterprise system involves crops, horticulture, agroforestry, livestock, fisheries, poultry, piggery, mushroom cultivation and bee-keeping with the potential to increase productivity. The Committee note that the cluster farming system has been undertaken in some states and Integrated farming system units set up in 50 KVKs to demonstrate the suitability of integrated farming system models. Keeping in view of the interest of small and marginal farmers, the Committee, desire the Department to increase the number of KVKs for demonstration of integrated farming system models expeditiously. The rise in input costs, dearth of labour etc. contribute significantly to the end cost of agriculture produce. Farm mechanisation is one of key to growth, for so called progressive farmers and can afford cost of such implements and machineries. Economy of scale may not appropriately suit farm machineries and implements, to be used in small land holdings. The unique characteristic of small and marginal farmers, thus calls for introduction and development of low cost, light weight, multi-purpose farm equipments and tools for their benefit. The Committee desire that appropriate steps including technological

innovation and support be extended to small and marginal farmers. Action taken by the Government may be apprised to the Committee.

2.21 The subsequent narratives deals with details examination of the working of the Department in terms of implementation of its Schemes and financial performance during the Fiscal, 2012-13 and projections for the year 2013-14. The Committee desire that the Demand No.2 of the Ministry of Agriculture (Department of Agricultural Research and Education) be approved.

CHAPTER – III

ANALYSIS OF DEMANDS

(A) INTRODUCTORY

3.1 The Department of Agricultural Research and Education (DARE) provides government linkages to the Indian Council of Agricultural Research (ICAR) - an apex and autonomous organization for planning, promotion, execution and coordination of agricultural research and education in the country. It also discharge other governance responsibilities like coordination of Central and State government agencies and international matters relating to agricultural research and education. ICAR is organized into eight Subject-Matter Divisions (SMDs), which are supported with a network of research Institutes/Schemes in their respective area of specialization, and have time-tested institutional linkages with the State Agricultural Universities (SAUs) and private organizations. In order to support this network, there are a number of multidisciplinary centres called *Krishi Vigyan Kendras* for assessment, refinement and demonstration of frontline technologies and training of farmers and rural entrepreneurs

3.2 Main activities of ICAR are agricultural research, frontline extension and education. These responsibilities are discharged through a network of institutions. Four ICAR institutes having the status of Deemed University also impart education through Masters and Doctoral Programmes. In addition, there is a scheme of ICAR to strengthen SAUs and promote excellence in education, and a Central Agricultural University for the North-east. Assessment, refinement and demonstration of new technologies are done by KVKs. For a number of activities,

ICAR institutes work in partnership with SAUs, who are mandated to education and state-specific research.

3.3 ICAR mandate broadly consists of the following responsibilities :

- To plan, undertake, aid, promote and coordinate education, research and its application in agriculture, animal science, fisheries, agroforestry, home science and allied sciences.
- To act as a clearing-house for research and general information relating to agriculture, animal husbandry, fishery, agro-forestry, home science and allied sciences through its publications and information system and instituting and promoting transfer of technology programmes.
- To provide, undertake and promote consultancy services in the field of research, education, training and dissemination of information in agriculture, animal science, fisheries, agro-forestry, home science and other allied sciences.
- To look into the problems relating to broader areas of rural development concerning agriculture, including post-harvest technology by developing co-operative programmes with other organizations such as the Indian Council of Social Science Research, Council of Scientific and Industrial Research, Bhabha Atomic Research Centre, Universities, etc.
- To do other things considered necessary to attain the objectives.

(B) OVERVIEW OF DEMANDS

Demand No. 2 pertaining to the Department of Agricultural Research and Education for the year 2013-14 was presented to the Lok Sabha on 27 March, 2012.

The details of allocations proposed in Demand No. 2 are as under :-

DEMAND No. 2

(Rs. in crore)

	Plan	**Non Plan**	**Total**
Revenue (Voted)	3415.00	2314.17	5729.17
Revenue (Charged)	00	00	00
Capital (Voted)	00	00	00
Capital (Charged)	00	00	00
GRAND TOTAL			**5729.17**

3.4 It may be seen that a sum of Rs. 5729.17 crore has been allocated to the Department for 2013-14 which is the second year of the Twelfth Plan. Out of this, Rs. 3415.00 crore is on the Plan side in the Revenue Section and the balance Rs. 2314.17 crore is on Non-Plan side under the Revenue Section. There are no allocations for the Capital Section in either Plan or Non-Plan side.

3.5 It may be pertinent to mention here that during the year 2013-14, the Department had proposed an amount of Rs. 4869.36 crore on the plan side to the Planning Commission against which an amount of Rs. 3415.00 crore on Plan side has been allocated.

3.6 The details of Revised Estimates for the year 2012-13 and Budget Estimates for 2013-14 are given in the table below :-

(Rs. in crore)

	RE 2012-13		**BE 2013-14**	
	Plan	**Non-Plan**	**Plan**	**Non-Plan**
Revenue	2520	2100	3415	2314.17
Capital	00	00	00	00

3.7 It may be seen that there is a hike of 26.20% in the BE of Rs. 3415 crore of 2013-14 on the Plan side as compared to RE amount of Rs. 2520 crore of 2012-13. On the Non-Plan side the BE amount of Rs. 2314.17 crore for the ongoing Fiscal is 9.25% more than RE amount of Rs. 2100 crore in 2012-13.

(C) OUTLAY FOR 2013-14

3.8 The details of proposed outlay of the Department for all Major Heads during the Annual Plan 2013-14 and the Budget Allocation are as under:

S. No.	Name of the Sector	Annual Plan 2013-14 Proposed	Annual Plan 2013-14 (BE)
1.	Crop Science+NIBSM+NIAB	628.01	465.00
2.	Horticulture	200.00	200.00
3.	NRM+NICRA	351.40	310.00
4.	Agricultural Engineering	99.30	75.00
5.	Animal Science	280.00	225.00
6.	Fisheries	104.80	85.00
7.	Economics, Statistics & Management	9.88	10.00
8.	Agricultural Extension	795.08	520.00
9.	Agricultural Education +KVASU, Kerala	535.00 +20.00	475.00
10	CAU+DARE	124.97	100.00
11.	ICAR Headquarters	315.99	395.00
12.	NAIP+GEF	399.39	400.00
13	NFBSFARA	100.00	75.00
14.	**New Initiatives under process**		
Iii)	CAU, Bundelkhand	200.00	50.00
iv)	CAU, Barapani	00.00	
v)	CAU, Bihar	150.00	30.00
vi)	National Agricultural Education Project	262.50	–
vii)	National Agricultural Entrepreneurship Project		
	Consortial Platforms	100.00	
	Total (ICAR+DARE)	**4676.32**	**3415.00**
	Budget announcement XII Plan (in 2012-13)	**193.04**	

3.9 The Outcome Budget broadly indicates the physical dimensions of financial budget as also the actual physical programme. It also records performance of first Nine months of a Fiscal year and targeted performance for the year ahead.

3.10 When the Committee enquired from DARE, the reasons for not adhering to the Ministry of Finance instructions contained in OM NO. 10(3)/E/Coord./2012 dt. 01 January, 2013 with regard to the Outcome Budget 2013-14**,** the Department in Post Evidence reply submitted that "the format assigned was adhered to in chapter II. It is indicated in the MOF OM that the figures of outlay 2013-14 in column 4(i) and 4 (ii) are to be provided as per statement of Budget Estimate included in Expenditure Budget volume 2 with plan Budget figures indicating the amount allocated for NE out of lumpsum allocation. In this regard it is stated that in chapter 2 of Outcome Budget 2013-14, the outlay 2013-14 figures are reflected in Annexure, strictly as per SBE format which is sector wise allocation. The scheme-wise figures BE 2013-14 also given".

3.11 The Department further added that "in chapter II Financial Outlay could not be included in view of the fact that details of all the schemes are included in chapter VI of financial reviews of the documents. Further, the functioning of set up and sector-wise accomplishment has been included except the major programmes in respect of woman/ gender equality. However, equity issues including gender are indicated exclusively in the document. Chapter III is presented as stated. Chapter IV regarding review of past performances Physical performance has been given sector -wise consisting of various schemes therein in a précised form for the year 2011-12 and 2012-13. Chapter V & VI Information to chapter V requiring Financial Reviews has been covered in Chapter VI whereas Performance of statutory and autonomous Bodies- has been covered in chapter V in the Outcome Budget, 2013-14. The information provided in these chapters were interchanged and this mistake has happened inadvertently. The discrepancy noticed will be rectified carefully following the guidelines for preparation of Outcome Budget for the year 2014-15".

(D) FUNDS UTILISATION DURING ELEVENTH PLAN

3.12 The Department during the year 2012-13 has furnished the following figures in respect of allocations being sought by the Department year after year in the Eleventh Plan, the amounts actually released in the five years of the Plan out of Rs. 12023.00 crore earmarked for the Eleventh Plan of DARE/ICAR and the actual expenditure against the funds thus released:

(Rs. in crore)

(Years	**Proposed**	**BE**	**RE**	**Expenditure**
2007-08	1945.50	1620.00	1434.00	1317.18
2008-09	2646.79	1760.00	1760.00	1652.61
2009-10	4000.00	1760.00	1760.00	1711.00
2010-11	4000.00	2300.00	2521.75	2354.29
2011-12	4534.44	2800.00	2850.00	1654.58*
Total	**17126.73**	**10240.00**	**10325.75**	**8689.66**

till January, 2012

3.13 From the figures of expenditure submitted by the Department for the scrutiny of Demands for Grants for the year 2013-14, the Department has revised their expenditure figure for the Financial Year 2008-09 and 2009-10 from 1652.61 crore to 1652.58 crore and from 1711.00 crore to 1711.44 crore. The final figure of Rs. 2765.27 crore for the expenditure during the year 2011-12 has also been furnished by the Department.

3.14 Out of Eleventh Plan allocation of Rs. 10325.75 crore, the Department have been able to spend a sum of Rs. 9800.77 crore in the entire Plan, leaving a huge balance of Rs. 524.98 crore unspent.

3.15 During the year 2012-13 the DARE/ICAR was allocated 0.49% of total outlay at BE. However, at RE stage, it has been, reduced to 0.38%. The overall

proportion for DARE/ICAR for the entire Twelfth Plan outlay with respect of total Central Plan outlay has also decreased from 0.70% to 0.68%.

3.16 The Department while submitting the reasons for non-utilisation of 11% funds by DARE/ICAR and its impact on various schemes/project and steps taken or proposed by the Department to utilize 0.70% allocation during the Twelfth Five Year Plan period has furnished that reduced allocation of DARE/ICAR during year 2012-13 from 0.49% of total outlay at BE to 0.38% at RE stage, does not mean non-utilization of 11% funds as far as utilization is concerned. As such, some of the new initiatives such as NAEP, NICRA, CRPs and Extra Mural Fund Projects are being initiated. Procurement of certain new works/equipments which were supposed to be taken up in the ongoing schemes of DARE/ICAR would be taken in due course. The allocation of 0.70% of the total Central Plan Outlay during the XII Five Year plan to DARE/ICAR will be most judiciously and efficiently utilized by expeditious clearance of SFC/EFC of on-going plan schemes, taking up certain projects under Extramural Funding, initiation of new scheme of NICRA, Platform research on core areas such as Genomics, Bio-fortification, Molecular Breeding, Nanotechnology, Diagnostics & Vaccines etc.

3.17 In reply to post evidence query of the Committee, the Department has submitted the quarterly expenditure incurred by DARE/ICAR, scheme-wise during 2012-13 (upto Feb.2013) both under Plan and Non-Plan are given at **Annexure-I** and **Annexure-II**, respectively.

3.18 The Committee during the oral evidence desired to know the reasons for unspent balance of Rs. 201.58 crore for 2010-11 and Rs. 108.89 crore for 2011-12 the representatives of the Department has stated as follows :-

"Sir, there are two reasons. Firstly, as you are aware, when there are EFC/SFC documents, there will be handful utilisation. In the absence of that, it will mean ongoing projections from the previous plan period. That is one reason where we would not be able to contemplate the whole thing and have the funds utilised. The second thing also is in regard to the releases that we have. This time, of course, the first semester release was there. So we could manage a little bit. Otherwise, in the previous year, as you have pointed out, the fund releases as and when they are received and also there are restrictions at some stages. These are some reasons and I must mention that we have a system where we are operating in hundred different locations of institutes. We are having Krishi Vigyan Kendras in different locations, and the University where we provide funds. From some of those locations, for various reasons sometimes the equipment could not be bought or sometimes the works could not be completed. So we do not deposit money unless things are completed. From those quarters when small moneys come, they get approved like this. But I must assure the Hon. Committee that once EFC is in place, plan fund utilisation is always in all the previous plans of the same condition. In the first year, it would be around 88 to 90 per cent; second year it would be around 92 per cent; in third, fourth and fifth year it will be 96 or 97 per cent. This is how the expenditure position all the time has been. We would make all out efforts once the EFC documents are in place".

3.19 While briefing during the oral evidence before the Committee, the Secretary, DARE has mentioned that the Eleventh Plan has closed and the growth percentage in Agriculture is close to 3.5%, up above 1.8, 2.3 and so on during the previous years.

3.20 As per instructions of Ministry of Finance regarding monthly expenditure plan, not more than 1/3 (33%) of BE may be spent during last quarter of the Financial Year. The MoF instructions related to Monthly Expenditure Plan in respect of Demand No. 2- DARE are enclosed at **Annexure-III.** Further, not more than 15% of BE is to be expended in the month of March. When Committee asked to furnish percentage expenditure incurred under Major Head/Divisions, in each quarter and month of March, in the Financial Year 2011-12, 2012-13, quarters, Division/Major Head-wise, reasons for failure to observe the instant instruction of Ministry of Finance and steps taken/proposed for evenly expanding of expenditure,

the Department submitted that the instructions of Ministry of Finance regarding monthly expenditure plan to be 33% of BE in the last quarter and 15% of BE in the month of March applies to PAO expenditure. However, the expenditure ceiling was enforced for the Demands for Grant as a whole, subject to RE ceilings from 2012-13. Accordingly, the PAO expenditure in respect of DARE/ICAR for the last quarter in the financial year 2011-12 and 2012-13 is as under:.

(Rs. in lakh)

DARE/ICAR	BE	PAO expenditure in the last quarter	% with respect to BE	PAO expenditure in March 2012	% with respect to BE
2011-12	280000.00	77815.00	28 %	42661.00	15 %
2012-13	322000.00	36737.86*	11 %	Yet to be received	

* expenditure upto Feb., 2013

3.21 In Post evidence reply the Department has clarified that the instructions of MoF regarding expenditure to be 33% of BE in last quarter and 15% of BE in last month of Financial Year applies at PAO level. The intention was to state that PAO being last check point of control of Government expenditure enforce these instructions. It is further clarified that these instructions are applicable and implemented by DARE as can be seen from statement of expenditure for the year 2012-13. The Monthly Expenditure Plan is always drawn up before the commencement of financial year, which is adhered to as per MoF's instructions.

(E) TWELFTH PLAN OUTLAY

3.22 The Twelfth Plan Document has been delayed despite several observations made by the Committee in their previous Reports. The Committee when asked the status of various schemes and time by which SFC/EFC of various schemes are

likely to be prepared and finalized, the Department in their written reply has stated that the Gross Budgetary support for the XII Plan of Rs.25,553 crores was communicated to DARE on September 18, 2012 by Planning Commission. The SFC/EFC proposals of all the schemes under DARE/ICAR are under preparation and appraisal/approval process is to be initiated from financial year 2013-14 onwards.

3.23 The Working Group of Planning Commission had recommended Rs.55000 crore as Twelfth Plan outlay against the DARE/ICAR proposal of Rs.57,887.21 crore. Now the Planning Commission has communicated Rs. 25,553.00 crore as Twelfth Plan allocation to the DARE/ICAR**.** The Committee when asked the basis on which the Department has worked out Rs. 57,887.21 crore and the details of sub-allocation made by them on receipt of communication from the Planning Commission, the Department in their written reply has furnished as follows:

Sector-wise XII Plan Proposed and Earmarked Outlay is detailed as below;

(Rs in crore)

	XII Plan Proposed Outlay (Rs 57887.21 cr)	**XII Plan earmarked Outlay (Rs 25553 cr)**
Crop Science	6178.66	3000.00
Horticulture	4900.00	1150.00
Natural Resource Management	3428.61	1350.00
Agricultural Engineering	828.29	500.00
Animal Science	6000.00	1400.00
Fisheries	1250.00	600.00
ESM	370.42	125.00
Agricultural Extension	10255.80	6000.00
Agricultural Education	12229.05	4000.00

Central Agricultural University + DARE	1695.95	500.00
MIS(ICAR Headquarter)	515.83	1631.00
National Agricultural Innovative Project	422.60	500.00
National Fund for Basic, Strategic and Frontier Application Research in Agriculture	1000.00	500.00
National Initiative on Climate Resilient in Agriculture	In NRM	600.00
KVASU Kerala (Budget Announcement 2011-12)		50.00
National Agriculture Education Project	2595.00	In Education
National Agricultural Entrepreneurship Project	5000.00	
New - CAU Bundelkhand , CAU Bihar , CAU Barapani	*1217*	*1167*
Consortia Research Platforms (Seed 250, Biofortification 150,Hybrids 200, Agrobiodiversity 200, Genomics120, Molecular Breeding150, Diagnostic and Vaccine 100, Nanotechnology 200, Water 150, Conservation Agriculture 100, Health Foods, 150, Natural Fibre140, Secondary Agri.200, Farm Mechanisation 140, energy 60, Agri-incubator 100, Borer 40, Phytochemical & High Value Compounds 30) These CRPs will be part of either ICAR hqrs. or of the respective schemes for the purpose of SFC/EFC approval.		2480
GRAND TOTAL	**57887.21**	**25553.00**

3.24 in regard to impact on curtailment of funds, the Committee was informed that the pace of progress of some important research programmes such as genomics work in horticultural plants, markers for desirable traits, and stem cell research are likely to get slackened. Besides, some other activities likely to be affected to a considerable extent are preparedness to address the impact of impending climate change, strengthening of existing KVKs with additional facilities like basic plant health, diagnostic facilities, minimal processing facility, soil and water testing labs, setting up of automatic weather stations for capacity building in agro-meteorology, farm mechanization and primary processing etc. The planning

process for the new initiatives namely “Consortia Research Platforms” on Agri-biodiversity Management, Genomics and Molecular Breeding, Seed, Water, Health Foods etc. are likely to be affected due to the reduced allocation during the XII Plan.

3.25 Further as ICAR is committed to extend financial assistance to SAUs for strengthening and development of higher education, the approved programmes/schemes under the Agricultural Education’s main scheme of “Strengthening and Development of Agricultural Education” such as niche area of excellence, experiential learning etc. are also likely to be affected.

3.26 Apart from this the pace of certain new initiatives proposed to be undertaken during XII Plan such as, National Agricultural Education Project, Farmers FIRST, Student READY, ARYA etc. will slackened.

3.27 Explaining the status of schemes, under approval by EFC/SFC, Secretary, DARE stated as follows:

> “Now, I will come directly to the 12th Plan. As you are aware, the National Development Council Meeting was held on 27th December, 2012 after which a figure was communicated to us as the 12th Plan allocation and that is Rs. 25,553 crore. But before that also, as I said, our Plan process is in full swing and we can submit the EFC documents only now after we got the formal communication from the Planning Commission. So, in the Annual Plan for 2012-13, we had the BE to the extent of Rs. 3,220 crore and I must mention here that at the RE stage, it was reduced to Rs. 2,520 crore. This reduction happened across all Departments and Ministries. Of course, in the mean time, we have replied many questions with regard to allocation of budget as to why there was some figure in the BE stage and why that was changed at the RE stage etc. Many questions that have been raised have basically a bearing with regard to this point.
>
> This is with regard to the BE and RE that we finally got. We have made all efforts to have this again revised.

In the meantime, I must mention, a number of meetings were held with the institutes, with the heads of divisions where collective measures, re-allocations and all these things have been done. At this time the RE of 2013-14 also has been received to the tune of Rs. 3,415 crore. This is what we have for the Annual Plan 2013-14.

With regard to the EFC Document, on 19th and 20th we had the Directors' meeting of all the institutes. Those Documents would be ready soon. Then the circulation of appraisal committee takes mandatory six week's time and then actual meetings would happen.

I would submit that from the Department side the preparedness, whether in terms of preparing EFC Document or linkages, planning, etc. all that has been done in the last two years time. The moment we have got a formal figure we have been into action. From the Department side, there is absolutely no delay."

3.28 Explaining the rationale of projections the Secretary, DARE stated during evidence as follows:

"xxx xxx I would like to mention, as you have seen the figures, it was our endeavour with the Working Group in the Planning Commission for the Twelfth Five Year Plan. We have gone before them. These are the proposed figures. We have proposed Rs.57,887 crore; the Working Group recommended Rs. 55,000 crore.

This is what action is being made. The investment in agriculture has to be at least to the order of one per cent of agriculture GDP. In many countries it is two to two-and-a-half per cent. That is why these figures were put up. I would like to mention that the actual provision was Rs.10,325.76 crore. I must mention that from our Department side, the performance, the utilisation has been made all the time above 95 per cent. At the end of the Plan Period, we have something like 95.7 per cent of the funds provided. That is the figure that we have at the end of Eleventh Five Year Plan.

For the Twelfth Five Year Plan, as I mentioned, looking at the challenges, the long-time research that we need to undertake, the high-end research and the kind of infrastructure that we require, all these were taken into consideration and the figures were projected.

Our entire scheme of KVK is under Plan. It is 100 per cent provided for by the Plan. Similarly, for the All India Coordinated Research Projects, 75 per cent is contribution from the Plan funds. We have brought all these matters. At the end of the day, as I said, the allocation was Rs.25,553 crore. From the Department side, we have again made submissions about the requirements.

At this stage, given the allocation for the first two years, as I said, Rs.2,520 crore and Rs.3,415 crore, adds up to something like Rs.6,000 crore. So, the rest of the period would be three years time. So, for the rest of the three years, these allocations have been made and this would be something like Rs.18,000 crore to Rs.19,000 crore. Our projections in the

three years of the Twelfth Five Year Plan, 2014-15 onwards, would be to the tune of Rs.6,000 crore per year.

We are aware that this would affect some of the projections where we wanted to have long-time research programmes. So, this definitely would be there. But having said that, given the allocation, we have held several discussions on how to privatise programmes and projects and programmes which we wanted to initiate may have to be taken up later. So, basically privatisation of projects and programmes is the only way to go about.

The second thing is, to the extent possible, linkages, sharing all facilities, infrastructure and so on. The third thing is that we are talking about platforms so that people come together so that there is no duplication. So, we are trying to look at all these things so that we can effectively manage within what we have provided. This is my submission, but then, definitely more funds would have been needed for this. But these are all the allocations at this time."

3.29 In reply to Post Evidence query regarding the schedule for various stages of SFC/EFC for considering and approvals of schemes, the Department has submitted the following :

> Action has been initiated to firm up the number of schemes under various sectors with a view to streamline the monitoring and convenience. New schemes as well as modification in schemes suggested have been brought to the notice of Planning Commission. Accordingly Plan funding is allocated to various SMDs to decide with Directors/ Project Directors / Project Co-ordinators of various schemes. This is an exercise in the process of finalization in the context of proposed targets set during the XII plan for preparation of EFC / SFC. Moreover EFC/ SFC of budget announcement for the year 2012-13 for five agricultural universities has already been completed.

3.30 The Committee, during Oral Evidence when asked the representative of Planning Commission regarding the rational behind reducing drastically the allocation for the DARE when the Working Committee are appointed by them recommends allocation for the Agriculture, DARE/ICAR and Animal Husbandry Sector the representative of the Planning Commission stated as follows:-

"So far as the 12th Five Year Plan is concerned, we have set a major target for the Department of Agricultural Research and Education and allocation to research sector which is taking plan expenditure to one per cent of the agricultural GDP. In the 11th Five Year Plan, the allocation to the agricultural research and education from both Central and State has been about 0.7 per cent. Our target for the 11th Five Year Plan allocation was one per cent of agricultural GDP. We analysed why we have not been able to achieve one per cent allocation to the agricultural research and education. The reason was that there has been some cut by Centre by about 20 per cent. The allocation on the plan side was Rs. 12,000 crore and the realisation is only Rs.10,000 crore which is about 20 per cent reduction by the Central Government to the agricultural research and education. The major factor has been that the States have not given their share to the agricultural research and education. In their case the reduction is far more than, the centre specially in the case of the non-plan allocation by the State Governments to the research and education. That is one of the reasons why we have not been able to achieve the one per cent target. This has been a major lacuna. If we can condition for RKVY allocation, to the State Governments based on their allocation agricultural research, we hope we will be able to realise higher allocation for agricultural research and education. So far as working groups are concerned, when they make recommendations, they are not constrained by the fact that what will be the total size of the resources available with the Planning Commission or the Government of India. Their recommendations have to be rationalised by the Department concerned keeping in view the total available resources in the country. In the case of DARE, what we have just mentioned is that the 12th Five Year Plan allocation has been 0.7 per cent of the total resources whereas in the 11th Plan the total allocation was 0.56 per cent. There has been considerable increase from the 11th Plan to the 12th Five Year Plan from Rs.10,000 crore to Rs.25,000 crore is the hike which has been given to very few departments by the Government of India. There have been demands from other sectors like infrastructure for education, health sanitation and within the resources available, hefty cake has been given to the Department of Agricultural Research and Education. We have taken note of the other observations that were made by the Committee and we will be submitting our submissions to the Committee in a few days".

OVERVIEW OF DEMANDS

3.31 The Committee note that as per Demand No. 2 pertaining to Department of Agricultural Research and Education a sum of Rs. 5729.17 crore has been allocated to the Department at BE for the current Fiscal. Out

of this Rs. 3415.00 crore has been a part of Plan side which is 26.20 % higher than the RE of previous financial year and 26.97 % lower than the proposal of the Department i.e. 4676.32 crore. On the Non Plan side the Department has allocated a sum of Rs. 2314.17 crore as BE 2013-14 which is 9.25 % more than RE of Rs. 2100.00 crore for the previous Fiscal. The Annual Plan Outlay of the Department which is Rs. 5729.17 crore is also to be seen in the context of total Outlay of Rs. 25,553 crore communicated by the Planner to the DARE for the Twelfth Five Year Plan. The Committee note that as in the past the Department has again failed to change the mindset of the Planner and the Government in the matter of allocation of funds to DARE during the current Fiscal also. This is a undoubted fact that Indian Agriculture has been facing a large number of challenges as narrated in previous chapter which will require capital intensive solutions, seems to have been given a go by the Planners and the Government. Both of them have, again in this Second year of the Twelfth Five Year Plan, too failed to understand the urgency of timely infusion of capital in the system so as to give an impetus for developing technologies for the emerging challenges. The Committee, therefore, recommend that allocations to the Department in the ongoing Fiscal be reconsidered and enhanced accordingly at the RE stage by when, hopefully EFC/SFC approval of the schemes will be cleared.

OUTCOME BUDGET

3.32 Outcome Budget broadly indicates the physical dimensions of financial budget as also the actual physical programmes of the Department. It also records performance of first Nine months of the a Fiscal year and

targeted performance for the year ahead. The Ministry of Finance issues instructions to various Ministries and Department for presentation of Outcome Budget Document in a uniform format in the Parliament. The scrutiny by the Committee has revealed that DARE has not observed the guidelines of the Ministry of Finance in preparation of the document in letter and spirit. For instance, minute details as required under the instant guidelines, have not been reflected in Chapter II to V, religiously and in clear terms. Further, as admitted by the Department, the information contained in Chapters V & VI, were inter-changed, though inadvertently. The Committee take strong note of the failure to adhere to the stipulations and other minute details, contained in the instant instructions, and also the so called "inadvertent mistakes" in the Outcome Budget. The Committee is of the view that due care and caution has not been exercised in the process of compilation and presentation of the Document to Parliament and its authorities. Appropriate action to correct the mistakes, be taken and the Parliament apprised thereof. The Committee also desire that DARE should meticulously follow the instructions of Ministry of Finance and present their error free Outcome Budget, in the ensuing year.

FUNDS UTILISATION

3.33 The Committee note that the figures for the Financial Year 2008-09 and 2009-10 submitted in the Committee last year, have been changed in the documents submitted to them this year. The Department has communicated the final figure for expenditure of 2011-12 Rs. 2765.27 against the expenditure of Rs. 1654.58 crore till January, 2012 communicated

previous year. The Committee find that Rs. 1195.47 crore (Rs. 2765.27 – 1654.58) has added in two months expenditure of the Department. Out of the allocated amount, the Department has been unable to utilize Rs. 524.98 crore (10325.75 – 9800.77) during Eleventh Five Year Plan period. The trend of expenditure clearly reveals that the Department has failed to observe the instructions/guidelines of Ministry of Finance regarding monthly expenditure plan. From the quarterly expenditure, the Committee found that for 2011-12 the expenditure is 28 % in the last quarter and for 2012-13 is 11 %. There was NIL expenditure in the Second Quarter in ICAR Plan and Non Plan side during the year 2012-13. The Committee note with a great sense of disappointment that despite several assurance given by the Department on the previous recommendations regarding utilization of funds by them have again failed to utilized 100 % of their allocation. They therefore, strongly feel that the Department to review the functioning of their funds utilization mechanism to check recurrence of such trend in future and apprise the outcome.

UNSPENT BALANCES

3.34 The Committee note that the Department has again surrendered unspent balances to the tune of Rs. 201.58 crore for Financial Year 2010-11 and Rs. 108.89 crore for F.Y. 2011-12 to the Government. The reasons regarding EFC/SFC documents, delay in release of funds and operation of institutes from different locations etc. tendered by the Department before the Committee are not convincing. The Committee note that while the Department argue forcefully to step its allocation and at the same time return the past years unspent balance, do reflect poorly on the performance and

planning process monitoring mechanism of the Department. The Committee, therefore, recommend the Department to revisit their existing funds utilization mechanism and over the whole system so as to ensure that the funds once allocated are fully utilized by various Divisions in the remaining period of the Twelfth Five Year Plan.

TWELFTH PLAN OUTLAY

3.35 The Twelfth Plan Document though approved by NDC in December 2012 has been delayed considerably and is yet to see the light of day, despite several efforts made by the Committee during the previous years, the Department has proposed Rs. 57,887.21 crore for the XII Plan. The Working Group appointed by the Planning Commission has also recommended Rs. 55,000 as Twelfth Plan outlay for DARE/ICAR. The Department has been communicated the Gross Budgetary support of Rs. 25,553.00 crore for the XII Plan by the Planning Commission on September, 2012. The Committee do not appreciate the downsizing of allocation, if the communicated figure is taken on its face value which is less than 1% of Agriculture GDP. The Eleventh Plan document had unequivocally emphasized agriculture spending on NARS, to be 1% of Agriculture GDP. The Committee would also urge upon the Government to allocate 1% of Agriculture GDP for Agriculture Research and also rework on financial and other requirements of 1% investment of Agriculture GDP on Research. The Committee note with a great sense of disappointment that the exercise undertaken by the Working Group set up by the Planning Commission to suggest plan size, has been proved to be futile, as Planning Commission failed to honour the recommendations made by one

of its authority. They therefore, desire the Government to make such examination/scrutiny of planning process, more realistic in future

3.36 The Committee note that 44% of proposed outlay of the Department has been reduced by the Planner for Twelfth Five Year Plan. The pace of progress of important research programmes like genomics work in horticultural plants, markets for desirable traits stem cell research will be slackened due to the cut. The strengthening of existing KVKs including new initiatives viz. Consortia Research Platform (CRP) on Agri-biodiversity Management Genomics and Molecular Breeding etc. will too be affected due to reduced allocation during the XII Plan. In addition to that new initiatives like National Agricultural Education Project, Farmers First, Student Ready, ARYA etc will be slackened. It is a matter of deep concern that High end Research Projects such as Agro-biodiversity, Genomics, Nanotechnology, Conservation Agriculture, Health Foods, Farm Mechanisation etc. which are component of CRP, may either had to be shelved or postponed indefinitely. The Committee appreciating the constraints of ICAR for slackening these important programmes would like to advise the Department to again draw attention of the Planner and the Government on the gravity thereof and ask enlarge funds to complete these activities as to overcome the challenges faced by Indian Agriculture.

CHAPTER IV

SECTORAL EVALUATION

(A) CROP SCIENCE

4.1 During the course of examination of the Demands for Grants of DARE, it was noted that under the major head Crop Science as against the proposed outlay of Rs.628.01 crore, Rs. 465.00 crore was approved indicating a reduction of 25.95%. It has further been observed that the proposals in respect of National Bureau of Plant Genetics Resources, Indian Grassland and Fodder Research Institute, Central Institute of Cotton Research, Nagpur PD-Rapeseed & Mustard, Bharatpur, Management AICRP NSP, Management Seed Production in Agriculture Crops and Fisheries, Management National Institute of Biotic Stress Management and Indian Institute of Agricultural Biotechnology have also been reduced by 38.29%, 64.78%, 77.56% 36.04% and 37.73%, 31.40%, 38.29% 93.33 and 92.5% respectively. Simultaneously, proposals under IARI, AICRP on Pesticides Residues, AICRP on Nematodes, New Delhi, AICRP on Wheat & Barley Improvement Project, Karnal, AICRP on Sugarcane, Lucknow, AICRP on Groundnut, Junagarh, AICRP on Sesame and Niger, Jabalpur, AICRP on Honey Bee Research & Pollinators, Hissar, Network on Agricultural Acarology, Bengaluru Network Programme on Insect, Biosystematics have received enhanced allocations at BE stage. The Department were, therefore, asked to explain the reasons for such changes in the proposals and how the various Schemes of the Division will be affected due to changes during the Fiscal.

4.2 In their written reply it was stated that based on the cut in the Annual Plan outlay by the Finance Ministry to the Department, Crop Science Division had been allocated Rs.468.00 crore as against the projection of Rs.628.01 crore.

Accordingly, the size of the Annual Plan (2013-14) was reduced. The effect of such budgetary revision would influence the procurement of research materials and cost of the laboratory / field work force. Operational cost of these projects were reassessed and need-based upward revision was done.

4.3 When desire to know the procedure for assessment of Schemes/projects and how frequently such assessment are reassessed the Department in their Post Evidence reply stated that progress of research schemes/projects are reviewed in Research Advisory Committee (RAC) meeting, Institute Research Committee (IRC) and Institute Management Committee (IMC) at the institute level. The recommendations are reviewed at Subject Matter Division level for need based revision. Besides, the Annual Group Meeting of All India Coordinated Research Project Scheme assesses the operational cost of projects. The overall requirement and expenditure for any possible revision and mid-course correction towards the operational cost of the projects are reassessed in the Senior Officers' Committee (SOC) meeting held every month at the ICAR Hqrs. Based on the expenditure monitoring in various schemes, the reassessment was undertaken to cover for the projected operational costs.

4.4 It has noticed from the Outcome Budget 2013-14 that the Division has been able to utilize only 52.13 % of funds upto January, 2013. The reasons assigned for non utilization of funds is the processing time taken to complete the official procedures to procure equipments. Since May 2012, monitoring of expenditure was undertaken and the BE allocation of Rs 460.00 crore reduced to 410.00 crore at RE stage. That Committee was also informed that wherever justifiably required, re-appropriation amongst sub-heads for Grant for Capital/ Salary / General was

done through divisional meetings. The RE was accordingly reallocated amongst schemes to effect the proper utilisation of the allocation.

(B) HOTRICULTURE

4.5 The major schemes/projects undertaken in horticulture division and their targets/achievements are given in **Annexure – IV**. While clarifying the deficiencies notices in their implementation and corrective measures taken, the Department in their written reply stated that since the XII Plan EFC proposals were under consideration, action on new works and equipments could not be initiated. Two meetings were held on 13.3.13 and 19.3.13 for finalization of reallocations, prioritization and EFC's discussions.

4.6 During the Financial Year 2012-13, the Division has been able to utilize 73.86% of funds till January 2012 and the institutes like Central Institute of Sub Tropical Horticulture, Lucknow, Central Institute of Arid Horticulture, Bikaner, Central Plantatio Crops Research Institute, Kasargod and Directorate of Floriculture, New Delhi were unable to utilize more than 26% of their allocations till January, 2012. While furnishing reasons for non utilization and corrective steps taken, the Department has submitted that the EFC documents are in the process of finalization. The expenditure position up to February, 2013 during the current financial year is in the range of 91 - 95% of RE with respect to Central Institute for Subtropical Horticulture (CISH) Lucknow; Central Institute for Arid Horticulture, (CIAH) Bikaner; Central Plantation crops Research Institute (CPCRI), Kasargod and Directorate of Floriculture Research (DFR), New Delhi.

4.7 The Committee when asked to clarify as to how finalization of EFC documents are concerned with non utilization of funds by these Centers/Institutes

of Horticulture Division during 2012-13, the Department in their Post Evidence Reply has stated that situation is not relevant in Plan schemes since plan-to-plan carry-over of funds is not permissible. Non-utilised funds of the ICAR schemes are monitored and adjusted at RE stage of each financial year. In the absence of approved EFC, the expenditure is based on the existing allocation.

(C) AGRICULTURE EXTENSION

4.8 Agriculture Extension is one of the major scheme to disseminate knowledge and information to the farmers. It enables transfer of technology and knowledge for Labs to the farms. The Department in their written submission has informed that the major programmes taken up by KVKs during 2012-13 include on-farm trials; frontline demonstrations; training of farmers and extension personnel; awareness creating extension activities; production of technology inputs for availability to farmer. During 2012-13 the KVKs have assessed, refined and demonstrations of technologies through 29428 on-farm trials 1.31 lakh front-line demonstrations in different farming systems. Besides, the KVKs provided training to 18.80 lakh farmers, rural youth and extension personnel and created awareness among 170.16 lakh farmers and other stake holders through large number of extension programmes. In addition the KVKs produced 1.74 lakh quintal seed and 206.59 lakh planting material ; analysed 3.78 lakh samples of soil, water, plants and manures and provided mobile agr-advisory to 11.14 lakh farmers by sending 1.47 lakh messages. Under NICRA project 100 KVKs also demonstrated a number of climate resillient technologies through 23441 demonstrations in farmers field covering 132 villages. The actual allocation as per RE of Rs. 43490.00 lakh for the year 2012-13 under KVK scheme will be will be fully utilized during the year.

4.9 The Agricultural Extension Division has been able to utilize Rs. 291.26 crore out of RE of Rs. 450.00 crore for 2012-13. The Committee when desired to know the reasons for non-utilisation of funds and steps taken for utilization of funds, the Department in their written submission has stated that the funds received will be utilized fully and the expenditure is being monitored.

4.10 The Committee in their Post Evidence query desired to know the existing expenditure monitoring mechanism under the Agriculture Extension Division and the reasons for non-utilisation of funds as per the instructions of Ministry of Finance by the Division. The Department in their reply has submitted that the expenditure incurred by KVKs is monitored regularly on monthly basis through eight Zonal Project Directorates by obtaining monthly expenditure reports from KVKs and after closing of the financial year through Audit Utilization Certificate duly signed by Chartered Accountant/Comptroller/F&AO. The funds are utilized by KVKs as per availability of funds in instalments.

4.11 During Oral Evidence the Committee when desired to know the status of performance of these KVKs in the country, the Secretary, DARE stated as follows:

> ''मैडम, केवीके की बहुत अहम भूमिका है। यह तो एक्सटेंशन सिस्टम नहीं भी है। यह तो फ्रंट लाइन एक्सटेंशन है। इसका बेसिक ऑब्जेक्टिव है, टेक्नोलाजी एसेसमेंट एंड रिफाइनमेंट। उसी उद्देश्य से ये स्थापित किये गये थे। हम संस्थानों या विश्वविद्यालयों में जो टेक्नोलाजी विकसित करते हैं, किस तरह उसे हर जिले में ले जाएं और उसे वैलिडेट करें। उसे अपनाएं।
>
> उसको अपनाएं और उसमें जो दिक्कतें एवं कमियां आती हैं, उनको हल करने के हमारे साइंटिस्ट्स के पास लाएं। एग्जैक्टली यहीं इंटेंशन थी। आप जानते हैं कि आज 632 केवीके में से करीब 30-32 केवीके ठीक काम नहीं कर रहे हैं। लेकिन मैं आपको आश्वस्त करना चाहता हूं कि मैं हर गांव में, हर केवीके में जाकर देखता हूं। कुछ केवीकेज, जो यूनिवर्सिटीज के साथ हैं, उनमें वैकेंसीज हैं। हमारी ओर से उनकी चिट्ठी भी लिखी गयी है कि आप तुरंत इन वैकेंसीज को फिल-अप करें। कई जगह पर फार्मर्स बोलते हैं कि केवीके से उनको लाभ हुआ है। कल ही मैं बसर, अरूणांचल प्रदेश में किसानों के बीच बैठा हुआ था, सब लोग बोल रहे थे कि पहले हमें पता ही नहीं होता था कि कैसे प्रोडक्ट्स बनाएं। बसर में उन लोगों ने कुछ प्रोडक्ट्स बनाए थे। उनका कहना था कि केवीके ट्रेनिंग से आज हम लोग महीने में 2000 या 3000 रुपये कमाते हैं। यह बात वहां से आ रही है, लेकिन

इसको कैसे सुदृढ़ बनाया जाए। हमारी सब्मिशन है कि एग्रीकल्चर टेक्नोलॉजी मैनेजमेंट एजेंसीज भी हैं और जो स्टेट एक्सटेंशन मशीनरी है, जिनका बेसिक मुद्दा है एक्सटेंशन करने का, यह देखने में आया है कि एग्रीकल्चर ही नहीं, दूसरे विभागों जैसे पशुपालन या मत्स्यिकी विभाग में वैकेंसीज हैं। हम समय-समय पर यह निवेदन कर रहे हैं, मंत्री महोदय से, चीफ सेक्रेटरी एवं एग्रीकल्चर सेक्रेटरीज से यह निवेदन करके आए हैं कि वहां पर उन पदों को भरिए। That is the basic extension arm. So, to have everything done by KVK or that complete district extension would be a very difficult task. It was not intended also initially. But from our side, yes, for example we have been saying vacancies have improved in the last 2-3 years. I must mention to you that there was 40 per cent vacancy three years before but now it has been reduced to 20 per cent, which is still not good. But we are making all out efforts to see that vacancies are first filled.

Second thing is, capacity building in these KVKs is a subject matter of specialists. When we recruit people, they come with some degrees. Now, as you said, climate change, new technology, precision farming, protected cultivation, for example, now-a-days for moisture conservation we have evolved a technique called hydro-gels. We use gels and they absorb 250 times. अगर एक ग्राम जेल डालें, तो 250 एमएल पानी जमा हो जाता है। Now, these are the things that they should also be made aware of. So, what we are trying to do is, a continuous backstopping from the university and institutes. समय-समय पर उनका ट्रेनिंग प्रोग्राम होना चाहिए। They have to undergo some human resource development programme. So, we are doing all these but at the same time, आपने अभी स्टूडेंट्स की बात कही। हमारे सिस्टम से, लगभग 62 एग्रीकल्चर यूनिवर्सिटीज से about 30,000 students come out every year जिनमें से लगभग 23,000 graduates, 5000 एमएससीज एवं 2000 पीएचडीज निकलकर आते हैं। Recently, 1st and 2nd March, in Delhi we had organised a meeting of youth researchers in agriculture, what their intentions for the next 30 years or 40 years and so on. I must mention here that we have one scientist to be in place in 2050 also. It was a total surprise. Now we are trying to bring in all these capacities to these youngsters so that they are made aware of these new technologies and they have a new way of thinking and so on. We also projected the manpower requirement in the next 20 years, 30 years and so on from the university. That is one another thing we are trying to do.

I would also like to mention here that many delegations which come here, mainly from Africa are asking for KVK model xxx xxx, an integrated approach on all subjects at district level. This is one model that we have in the KVK. xxx xxx xxx I would also like to mention that in some KVKs where we have had problems, we have called them and we are taking corrective measures. I must say 600 KVKs are doing well. But we need to enhance their capacity. 12वीं योजना में उनकी पर्सनल ट्रेनिंग के लिए, कैसे उनका कंटीनजेंसी पैसा बढ़ाएं और how to keep them abreast

with the new technologies happening. So, we are trying to do all this in the Twelfth Plan.

4.12 During oral Evidence, the Committee pointed out drastic reduction of funds in many Major Heads. For instance, allocation for Agricultural Education curtailed from Rs. 12,230.00 crore to Rs. 4,000.00 crore. Similarly, Agriculture Extension down from Rs.10,000. 00 crore to Rs.6,000.00 crore, same fate noticed for Animal Sciences where the reduction was from Rs.6,000.00 to Rs.1,400.00 crore, Fisheries from Rs.1,250.00 crore to Rs.600.00 crore. The allocation for the Agriculture Extension was also on the decline year after year.

4.13 Explaining his point of view the Secretary, DARE during evidence stated as follows :-

> "xx xx xx I would like to submit that this is what we have submitted in the first projection that started as early as 2011. We have made these projections given the kind of challenges. Madam, as you know, as the plan process proceeds, the Planning Commission takes it up and then it goes for discussions with the Finance Ministry and so on. Then, finally we are allocated this budget. In that, we will have again to go to different heads. You are right and I would like to submit my thanks to you for this point on KVKs. This is totally a plan programme. While in other division, we will have non-plan components towards salaries. But KVKs, including salaries, are only met by plan funds. So, this is what we have been submitting time and again that we require more funds towards this. We have brought up these points.
>
> I would like to mention it again that at least in KVKs, this happened because of the RE 2013, where we have got a cut of Rs.820 crore.
>
> When it comes to fund utilization in KVKs, it will be hundred per cent. Because this would not be adequate, we will have to take some more spill over from this year to next year and this will be hundred per cent utilization".

He further added.

> In the year 2011-12, that figure was due to the pay arrears that we had to pay in the Sixth Pay arrears. In the year 2012-13 and 2013-14, we are building up and we want to enhance. xxx xxx xxx We had asked for as much as Rs. 10,000 crore. Now, we have been allocated something like Rs. 6,000 crore. We had already got annual plan allocation RE for 2012-13 and BE is also with us for 2013-14. Given those figures for Rs. 2,520 crore and Rs. 3,415 is what we could do. Again I would like to submit here since Rs. 6,000 crore are there, so, Rs. 6,000 crore minus these two years figures, I think we can go up to something like Rs. 1,000 crore in the 3 year i.e. in the 12th Plan. That shows a good amount of allocation. We also have been submitting Sir in this Committee and also Planning Commission and everywhere that the contingency money that is available for each KVK is only of the order of Rs. five lakh. So, we have brought out this also very clearly that it has to be enhanced manifolds because seven scientists are sitting in KVKs. Just about Rs. 50,000 per month would not be adequate. We have made this point. In the next three years, we will also see a considerable rise in allocation to Extension.

4.14 During the Oral Evidence the representative of Planning Commission supplemented that

> "Sir, on KVKs, we have been suggesting to the Planning Commission that there is a component of the non-Plan which should be transferred to the non-Plan so that plan expenditure is spent only on the activities which are developmental in nature. But somehow the Ministry of Finance has not accepted the recommendation of the Department of Agriculture Research and Education to transfer funds which are of non-plan in nature and which should be transferred to non-plan side, but they have not agreed to that. It is a bit of a concern".

4.15 As a large number of KVKs in the country are unable to discharge their assigned mandate due to lack of infrastructure, shortage of all other reasons. As such, DARE took a policy decision to involve private participation in the Extension Services. The private players indulged into pursuing their own agenda. The system of private participation had its own demerit. The Committee during oral

evidence, when asked the representative of the Department, on these issues stated as follows :-

> "Madam, xxx xxx xxx we see a private extension xxx in different districts, we have analysed, they take it invariably with some inputs. Very common thing is to promote potash fertilizer. So they take up only those plots and have an absolute agenda there. Let us be very clear. Now, if they want to promote their product, that much of extension goes or they have their seeds or whatever, they want that much in those specific plots and it is not a universal extension system for the whole KVKs with all commodities.
>
> If they talk of one seed, for example, hybrid seed of vegetable, it is only limited to that only whereas in the public extension system, as you also said just now, the demand is from cereals to pulses to oil seeds to milk to fishes, everything. So, nobody can replace the existing system, I would not use the word deficient, but whatever its performance we need to strengthen it.
>
> At this time, I must say, there are 632 KVKs as on today. Administrative building is available with 554 of them; you talked about infrastructure, administrative building is not available with 78 KVKs, that is what we are factoring in in the Twelfth Plan; soil testing laboratories available with 389 of them. So, we still have to go for 243 in the Twelfth Plan and farmers are still available with 490 out of 632, 142 is our target in the Twelfth Plan; staff quarters, of course, may not be of much interest; demonstration units, 394 are available, we still need to do for 234. This is what we are asking for more money in the Twelfth Plan to cater to all these. As you said, we need to go a long way".

4.16 Indian Agriculture is mostly rain dependent farming system. There has been drought and drought like situation prevailing in some parts of the country. Improvement in productivity in Rain fed/Dry land agriculture are crucial areas requiring technological and research support from ICAR/DARE especially in the context of prevalent drought. When queried about measures taken to contain effect of drought, the Department in Post Evidence Note submitted that the ICAR has developed a number of technologies for drought proofing which are listed below:

- Use of early maturing drought tolerant varieties in chronically drought prone areas.

- Adoption of rainwater harvesting technologies for providing supplementary irrigation during dry spells
- In situ moisture conservation practices to help tie over short term droughts by crops
- Wide spacing and altering plant geometry to reduce water requirement
- Mid-term contingency measures like foliar application of Potassium and reduction of plant population
- Preparation of district-wise contingency plans and their dissemination.

Specific examples include:

- Demonstrating drought proofing through varietal replacement in rainfed rice and alternate cropping systems during the 2009 in Chhatisgarh, Orissa and Jharkhand
- In Andhra Pradesh, irrigated dry crops were successfully demonstrated during dry periods in place of paddy.
- Technology for recharge of open and bore wells helped to augment water availability in Saurashtra region for supplemental irrigation of cotton and groundnut, during 2002 and 2009 droughts.
- In Maharashtra and northern Karnataka, adoption of compartmental bunding saved crops in large areas and the farmers were able to ensure fodder availability for livestock during a drought year.
- Water harvesting and short duration finger millet varieties could help farmers harvest 25-30% yields in south interior Karnataka during 2012 drought.

Integrated watershed programme in Maharashtra (Jalna, Aurangabad and Beed districts) ensured drinking water and fodder availability during 2012 drought.

4.17 The Department further added that Central Research Institute for Dryland Agriculture (CRIDA), Hyderabad has conducted 160 demonstrations under crops, natural resource management and fodder in the drought affected districts of Maharashtra, Karnataka, Gujarat and Rajasthan during 2012 under National Initiative on Climate Resilient Agriculture (NICRA) project and AICRP on Dryland Agriculture. Likewise, Central Arid Zone Research Institute, Jodhpur organized 153 demonstrations and trainings in 2012-13 on drought proofing. The NAIP subproject activities on livelihood improvement are undertaken in cluster mode. These

subprojects are being implemented through village level and cluster level committees in association with more than 40 KVKs.

4.18 During briefing to the Committee the Secretary, during evidence stated as follows:

> "xxx xxx xxx. Today we talk of with confidence the contingency plans which are very important, because even now we have drought situation in some districts, etc. and from ICAR side, we have 400 plus districts contingency plans on the website, which anybody can use."

4.19 In reply to post evidence query regarding the District level contingency plan, the Department has submitted that ICAR in association with State Agriculture, Horticulture, Veterinary and Fisheries Universities prepared district level contingency plans to meet aberrant weather situations for the entire country based on the recommendations of the parliamentary committee. These plans cover not only crops but also horticulture, livestock, poultry and fisheries sectors. The plans cover climate related contingencies like delay in monsoon, mid-seasonal break in monsoon, unseasonal rains, heavy foods, cyclones, cold wave, frost, heat wave etc. So far, around 400 districts have been covered which are at **Annexure-V.**

(D) AGRICULTURE EDUCATION

4.20 Developing and strengthening Agricultural Education at Under/Post Graduate levels and research are some key areas of Agriculture Policy. The Department has submitted that the Agriculture Education is being imparted in the country by 55 AUs, 5 DUs, 1 CU and 4 CUs having Agricultural faculties. To reduce the in breeding in Agricultural Education and promote the talent, an All India Entrance Examination for Admission to UG level courses for 15% (1234) seats and

to PG level courses for 25% (2812) seats are also held annually. Admissions to 11 bachelor degree programmes namely Agriculture, Horticulture, Fishery, Forestry, Home Science, Sericulture, Bio-Technology, Agricultural Engineering, Dairy Technology, Food Science and Agricultural Marketing & Cooperation are done through entrance examination. Admissions are also done for 93 Master Degree Programmes awarded by Agricultural Universities in 20 major disciplines viz. Plant Biotechnology, Plant Sciences, Physical Science, Entomology & Nematology, Agronomy, Social Sciences, Statistical Sciences, Horticulture, Forestry/Agroforestry & Sericulture, Agricultural Engineering & Technology, Water Science & Technology, Home Science, Animal Biotechnology, Veterinary Science, Animal Sciences, Fisheries Science, Dairy Science, Dairy Technology, Food Science Technology and Agri-Business Management. The SRF fellowships for Ph.D. programmes are also being awarded in 56 subjects in AUs. The human capital availability and requirements in Agriculture and allied sector has been worked out through a study entrusted to National Academy of Agricultural Research Management (NAARM), Hyderabad and Institute of Applied Manpower Research, New Delhi. The discipline wise supply (2010) of Human Capital requirement for the Agricultural Sector is as under:

Annual out turn by education level in 2010:

Discipline	**UG**	**PG**	**Ph.D**	**Total**
Crop science	11852	3514	583	15949
Horticulture	1001	409	55	1465
Veterinary	1761	797	125	2683
Fisheries	285	109	30	424
Dairy	255	30	25	310
Agri Biotech	558	156	20	734
Agriculture Engineering	1218	262	27	1507
Forestry	386	275	55	716
Total	**17316**	**5552**	**920**	**23787**

4.21 The ICAR also supports to a limited extent strengthening and development of agricultural education, student amenities like Educational Museum, Sports Complex, Smart Class Rooms, Examination Hall, Boys & Girls Hostel etc. The supports to promote niche area of excellence, hands on training (experiential learning), Library and other student amenities are also provided for education quality and reforms. The Accreditation of university is done after the first batch of student pass out to ensure quality of higher agricultural education. Scholarships and Training Programmes for Human Resources Development and capacity development are also covered under the Agricultural Education. The various projects of Agricultural Education are as under:

Details of Projects Initiated for Agricultural Education

Name of the Scheme: ***Strengthening and Development of Higher Agricultural Education in India***

Programmes	**Major Activities**
Infrastructural Development	Girl's, boys' and international students' hostels, educational museums, examination halls, sports facilities, refurbishing /renovation, model-class rooms and laboratories, central instrumentation facilities, centenary grants to the universities, purchases, repair and maintenance of existing equipments and computers etc. NISAGENET to develop the database of information of all the universities
Niche Area of Excellence	Twenty two Niche Area of Excellence supported to strengthen research capabilities in the universities, at present
Experiential Learning	To promote entrepreneurial skills for UG students 376 modules established
Curriculum development and delivery & strengthening of UG/PG	Preparation of quality instructional material, practical manuals and e-resources; contingency

Teaching	grants for UG/PG practicals
Student and staff amenities	Study tours, agri-sports, agri-fests, teaching technology laboratory, placement cells, examination and entrance test facilities, merit/performance-based support: university level text book writing, personality development; counseling of students and tutorials for SC/ST students
Library Strengthening	Learning resources, internet connectivity, text books, handbooks, reference books, book banks, journals other than CERA-subscribed and ICT strengthening
Modernization of AU Farms	For augmenting facilities/infrastructure of instructional farms to scale up research and teaching capabilities; 48 AUs have been supported.
Faculty Development	Faculty development, Facilitating within country participation in symposia, seminars, training (other than CAFT); HRD for technical and administrative staff; Best Teacher Award; Adjunct and visiting faculty,
Centres of Advanced Faculty Training (CAFT)	For faculty development in specific areas of agriculture and allied sciences, 31 CAFT have been established.
Summer & winter schools/short courses	Need-based faculty development by organizing 63 Summer & winter schools/short courses
Emeritus Scientists	To provide continuity of research work by superannuated scientists in key areas, 50 positions are existing.
ICAR National Professors (including Borlaug Chair)	For promoting research by renowned scientists and develop school of thought, 10 Chairs are established.
ICAR National Fellows	To promote the middle-level scientists to intensify research in emerging key areas, 25 positions are existing.
Overseas Fellowships	For forging global competitiveness among students, 15 fellowships are awarded annually for pursuing studies abroad by Indian students and foreign students in India
National Fellowships	Annually, JRF (475); SRF (202) Merit cum Means scholarship; internship for veterinary students; stipend for Rural Agricultural Work

	Experience, National Talent Scholarship
All India Entrance Examination for UG/PG programmes (2013)	Total no. of applicants : UG (95945); PG (23786); SRF (2266); Total (121992)
Quality Assurance and Accreditation	Review and reforms: periodic review of course content; review of regulatory mechanisms such as Model Act and norms, standards, academic regulations and governance. Evaluation Manpower/resource assessment, Impact assessment (outsourcing and peer reviews), accreditation of universities/colleges and quality reforms
Capacity Building at NAARM	Three Foundation Courses for Agricultural Research Service (FOCARS) and 45 senior-level training programmes including Management Development & Executive Development Programmes are being offered. Post Graduate Diploma in Technology Management in Agriculture (PGDTMA) is also offered through Open Distance Learning.
ICAR National Professors (including Borlaug Chair)	For promoting research by renowned scientists and develop school of thought, 10 Chairs are established.
ICAR National Fellows	To promote the middle-level scientists to intensify research in emerging key areas, 25 positions are existing.
Overseas Fellowships	For forging global competitiveness among students, 15 fellowships are awarded annually for pursuing studies abroad by Indian students and foreign students in India
National Fellowships	Annually, JRF (475); SRF (202) Merit cum Means scholarship; internship for veterinary students; stipend for Rural Agricultural Work Experience, National Talent Scholarship
All India Entrance Examination for UG/PG programmes (2013)	Total no. of applicants : UG (95945); PG (23786); SRF (2266); Total (121992)
Quality Assurance and Accreditation	Review and reforms: periodic review of course content; review of regulatory mechanisms such as Model Act and norms, standards, academic regulations and governance. Evaluation Manpower/resource assessment, Impact assessment (outsourcing and peer reviews), accreditation of universities/colleges and quality reforms

Capacity Building at NAARM	Three Foundation Courses for Agricultural Research Service (FOCARS) and 45 senior-level training programmes including Management Development & Executive Development Programmes are being offered. Post Graduate Diploma in Technology Management in Agriculture (PGDTMA) is also offered through Open Distance Learning.

4.22 The Committee when asked about the impact of reduced allocation of Major Head Agricultural Education at BE stage on various schemes, the Department submitted that no new works/Purchase of equipment has been undertaken by the universities for strengthening and development of Higher Agricultural Education during the current financial year. However, all the programmes formulated, including the infrastructural support to provide quality education, shall be taken up during the remaining period of XII plan, after the finalization of the EFC.

(E) HUMAN RESOURCES

4.23 Development of Human Resources, is key to ushering Agriculture growth. The Committee when asked about the details of the schemes/projects initiated for the development of Human Resource in Central Agricultural Universities/ICAR Institutes etc. and the modalities/plan of action of the govt. to share agricultural research with State Agricultural Universities, the Department submitted that there is only one CAU located at Imphal, Manipur and has its jurisdiction over the States of Arunachal Pradesh, Mizoram, Sikkim, Tripura, Meghalaya and Manipur with integrated programme of teaching, research and extension education. The University offers 8 UG, 25 PG & 8 Ph.D. programmes in the disciplines of Agriculture, Veterinary and Animal Husbandry, Fishery Science, Home Science, Horticulture, Forestry, Agriculture Engineering and Food Processing Engineering.

The seven different colleges with total intake capacity of 358 students in UG, 169 in PG & 18 Ph.D. programmes are

1. College of Agriculture, Imphal, Manipur
2. College of veterinary Sciences & AH, Selesih, Aizwal, Mizoram
3. College of Fisheries, Lembucherra, Tripura
4. College of Horticulture and Forestry, Pasighat, Arunachal Pradesh
5. College of Home Sciences, Tura, Meghalaya
6. College of Engineering & Post Harvest Technology, Ranipool, Sikkim
7. College of Post Graduate Studies, Barapani, Umiam, Meghalaya

4.24 The 4 ICAR Deemed to be Universities (DU) i.e. IARI (New Delhi), IVRI (Izatnagar), NDRI (Karnal) and CIFE (Mumbai) are the National level Institutions imparting Higher Agricultural Education.

The total number of disciplines and intake capacity of DUs is given below:

Name of DU	No.of Discipline	Annual Intake capacity
IARI	24	115
IVRI	22	140
NDRI	1(UG); 13(PG)	22 132
CIFE	11	77

4.25 The multi-disciplinary and multi locational agricultural research is being taken up by funding research programme through specific All India Coordinated Research Projects/ Network projects which are located mostly in the Universities. The Niche Area of Excellence programme is also supported under Higher Agricultural Education to attain excellence in cutting edge areas like microbial diagnostics, bio-prospecting, pesticidal gene products, bio-agents, sustainable fish farming, metagenomics, drought resistant strategies, molecular breeding and rainfed agriculture etc. A comprehensive capacity development framework based on required competencies has been put in place for the development of Human

Resources in ICAR from entry level to senior managers. The framework and programmes have been approved. A draft training policy for the organization is also proposed.

(F) VACANT POSTS IN DARE/ICAR

4.26 The Committee in Post Evidence query asked the details of faculty at CAU, Imphal and seven different colleges and four Deemed to be Universities also the intake and actual number of students enrolled.

4.27 In their written submission the Department has stated that the number of Faculty, intake capacity & actual numbers of student enrolled at UG, PG & Ph.D. levels at Central Agricultural University, Imphal and its seven different colleges are as below:

Name of College	**Number of Faculty**		**Intake Capacity**			**Students Enrolled**		
	Sanctioned	**In position**	**UG**	**PG**	**Ph.D.**	**UG**	**PG**	**Ph.D.**
College of Agriculture, Imphal	48	39	88	48	4	63	27	3
College of Veterinary Science & Animal Husbandry, Aizwal, Mizoram	65	50	66	48	6	53	13	3
College of Fisheries, Tripura	33	23	35	20	-	24	13	-
College of Horticulture & Forestry, Pasighat	63	41	75	8	-	52	6	-
College of Home	35	18	32	-	-	15	-	-

Science, Tura								
College of Agricultural Engg. & PHT, Sikkim	45	25	62	-	-	32	-	-
College of Post Graduate Studies, Barapani	55	22	-	45	8	-	29	8

4.28 The discipline wise intake capacity of the four ICAR Deemed-to-be-Universities, the actual students enrolled in each of the discipline and the number of teachers/faculties engaged by these Universities are given at **Annexure-VI.**

4.29 In reply to written reply the Department has submitted the information related to Scientific, Technical and Administrative posts lying in DARE/ICAR, its affect on research and other activities and the number of posts filled in 2012-13 and proposed to fill in 2013-14. The Department submitted as follows:

Category	Sanctioned	In Position	Vacant	%age vacant
Scientific	6472	4577	1895	29.27
Technical	6635	5744	891	13.42
Administrative	4891	4311	580	11.85

4.30 Retirement and recruitment is a continuous process. Presently the R&D programmes are being managed through judicious deployment of the available scientific manpower. In other categories the services are appropriately outsourced as per operational needs and requirements. In the Scientific category 302 positions in different levels have been filled up in the year 2012-13. In the Administrative and Technical category 292 and 248 positions respectively have been filled up during this period.

4.31 All the posts in the Scientific category and Group 'A' posts in the Administrative category are got filled up in the ICAR system centrally through the Agricultural Scientists' Recruitment Board (ASRB). Requisitions for these positions have been forwarded / are being forwarded to the ASRB to get these positions filled up on top priority basis. In the year 2013-14, 431 positions of Scientists in the entry-level are expected to be filled up based on the results of the ARS Examination 2012. 75 selectees are availing joining time for completion of their Ph.D. and are likely to join in 2013-14. Besides 441 requisitions are in various stages of process in the Agricultural Scientists' Recruitment Board for which the recommendations are expected in this year. Requisitions for the remaining posts are under process for being forwarded to the ASRB.

4.32 In all other cases wherein recruitment is decentralized and delegated, instructions have been issued to all the Institutes for filling up the approved vacancies expeditiously. Efforts are being made to fill up these vacancies and the status is closely monitored.

4.33 In Post Evidence reply the Department has submitted the following Division-wise Scientists manpower figures:

(As on 31.03.2013)

SCIENTISTS				
Sl. No.	Name of the Division	Number of Institutes / PDs NRCs	Sanctioned	In position
1.	Crops Division	26	2061	1469
2.	Horticulture	23	872	664
3.	Animal Science	18	1019	756

4.	NRM	14	1038	719
5.	Extension	09	68	61
6.	Fisheries	08	683	448
7.	Engineering	06	436	230
8.	Education	02	85	47
9.	ICAR Headquarters	01	51	46
10.	RMPs		159	137
Total		107	6472	4577

(G) AGRICULTURE ENGINEERING

4.34 Improvement in farm practices, use novel agricultural implements, are pre-requisite for improving agricultural output. The Department has in their written reply submitted the major schemes/projects initiated under Agricultural Engineering leading to improvement in farm practices and development of agricultural implements for improving agricultural outputs are as follows:

1. Central Institute of Agricultural Engineering, Bhopal
2. All India Coordinated Research Project (AICRP) on Farm Implements and Machinery
3. AICRP on Ergonomics and Safety in Agriculture
4. AICRP on Utilisation of Animal Energy for enhanced system efficiency

The physical targets and achievements of the above mentioned schemes are as follows;

1. CIAE, Bhopal

Targets	Achievements
Design/development, refinement of farm equipment and crop production technology	Mechanization of nursery media filling and sugarcane bud-chip settlings in protrays
	Size reduction machine for arecanut sheath for feed
	Development of pre-emergence herbicide strip-applicator as an attachment to sowing devices for wide spaced crops
	Power weeder for cassava planted in mounds in slopy terrain
Performance evaluation of farm equipment including irrigation equipment	Performance evaluation of surface and sub surface drainage (SSD) systems
	Evaluation of platform type fruit harvesting system
Manufacturing and supply of CIAE developed technologies	Production and supply of equipment/ technologies: 4461 Equipment/technologies costing Rs 78.985 lakhs

2. AICRP on Farm Implements and Machinery Physical Achievements (2012-13)

Target	Achievement
Research & Development	
Design, development and evaluation of tractor drawn	Developed tractor drawn turmeric digger and commercialised
Design and development of power weeder for weeding on ridges and furrows	Designed and developed a power weeder for weeding on ridges and furrows and is being tested.
Development of tractor operated Cassava harvester	Designed and developed tractor operated Cassava harvester
Development of light weight thresher for hilly regions	Developed light weight thresher for hilly region and tested for threshing of cowpea.
Prototype Manufacturing	
Fabrication of 3000 prototypes of manually operated, 65 animal drawn and self-propelled/power operated equipment under Prototype Manufacturing	3,688 manually operated, 78 animal operated and 65 self-propelled/power operated equipment were manufactured under Prototype Manufacturing Workshop
Frontline Demonstration of Farm Equipment	
Conduct frontline demonstration of 35 farm equipment at farmers' field	Thirty five equipment were taken for demonstrations on farmers' fields, 5500 ha area was covered, used for 450 h of threshing operation, tree climber was demonstrated on 350 trees, 1720 pits were dug and 56 demonstrations of horticultural tools were conducted.

3. AICRP on Ergonomics and Safety in Agriculture

Target	Achievement
Development of safety gadgets for farm machines/ workers- 2 Nos.	Carried out studies on two safety gadgets for farm machines/ workers and work will complete in 2013-14.
Ergonomic evaluation of tools/equipment and their refinement- 2 tools/equipment	Carried out ergonomical evaluation and refinement of two tools/ equipment.
Women friendly tools and equipment	Developed two women friendly tools/equipment.
Technologies for Hill area agriculture-	Low cost gravity ropeway for hilly terrain has been developed.
Demonstrations/ FLD programmes on farm safety awareness, ergonomically improved	Carried out 115 demonstrations/ FLD programmes on farm safety awareness, ergonomically improved equipment and

equipment and women friendly equipment- 100 Nos.	women friendly equipment.

4. AICRP on Utilization of Animal Energy

Target	Achievements
Adoption of animal drawn two row seed drill for use by bullocks of Sikkim region for sowing wheat and mustard.	Two row animal drawn seed cum fertilizer drill was adopted for sowing of wheat and mustard crop in narrow terraces of hills of Sikkim.
Refinement and adoption of animal drawn seed drill for sowing of wheat crop under zero tillage conditions.	A two row zero till seed cum fertilizer drill was developed for sowing of wheat crop after paddy under zero tillage conditions in narrow terraces of hills
Development of model energy village (in areas where availability of grid electricity is limited and farmers depend on animal power) and promotion of DAP based technologies for sustainable livelihood of resource poor farmers.	Four villages were selected in Raichur, Allahabad, Udaipur and Jorhat districts where each village was saturated with package of animal drawn implements.

4.35 The outlay of Rs. 75.00 crore has approved at BE stage against the proposal of Rs. 99.30 crore which is more than 25 % of the proposal of the Division. The Committee when asked about the reasons and the manner in which the programmers of various institutes are likely to be affected and the corrective measures taken by the Department, the Ministry in their written submission stated that initial a demand for funds at Plan BE 2013-14 stage was received from various units/ schemes under the SMD of Agricultural Engineering, approximately to the tune of Rs. 92.00 Crore. This formed the basis of proposing an allocation of Rs. 99.30 Crore to the SMD of Agricultural Engineering. The ground on which this was done was to fulfill the aspirations of the Schemes during the year 2013-14. The demand being on higher side was scaled down. At the end of financial year 2012-13, when most of the activities had accomplished, and a realistic picture

emerged, it was felt that there is a need to critically analyze the progress and then match the demand for the year 2013-14, the outlay of Rs. 75.00 Crores for BE 2013-14 was then proposed.

CIAE + Network APCAEM, Bhopal and NIRJAFT, Kolkata

4.36 The reduction is only in respect of the items under CAPITAL budget head--Equipment and Civil works which will require the approval of EFC/SFC in XII Plan document of the respective Institutes.

AICRP on RES, Bhopal and AICRP on PHT, Ludhiana

4.37 The justification for reduction holds good on two grounds i.e. firstly, initial allocation in November, 2012 had amount under the head 'Equipment' subject to the condition of the same being approved as a part of the EFC which by February, 2013 was evidently not accomplished. Secondly, the Establishment Charges were reduced as it was evident in February, 2013 that some vacancies will not be filled.

4.38 The pace of the research activities in the areas of Farm Mechanisation, Development of Post Harvest and Renewable Energy Technologies and Development of Technologies for diversified use of jute and allied fibres will be affected.

4.39 Apart from the Plan funding of the schemes, the new R & D areas will also be addressed through Extramural Funded Projects and following Consortia Research Platforms:

- Farm Mechanisation and Precision Farming
- Secondary Agriculture (Processing and Value Addition)
- Health Foods

- Energy in Agriculture
- Processing and Value Addition in Natural Fibres

4.40 From the documents supplied to the Committee it has been noticed that out of allocation of Rs. 52.00 crore RE for 2012-13 the Division has been able to utilized Rs. 34.32 crore upto January, 2013 and they has submitted that there were certain units with low expenditures up to 31.01.2013 because of less expenditure reported up to January, 2013 under the head 'Establishment Charges'. However, there has been an increase in expenditure up to the month of February, 2013, under the head 'Establishment Charges' and this has led to expenditure enhancement.

4.41 The Department has further stated that the following steps has been taken to ensure complete utilization of funds by the end of financial year 2012-13:

- Monthly monitoring of the head-wise expenditure
- Meetings with Directors and Project Coordinators
- Re-appropriation among the sub-heads of Capital budget head and sub-heads of Revenue budget head, wherever justifiably required, within an Institute/AICRP; and reallocation at RE.

(H) NATURAL RESOURCE MANAGEMENT

4.42 Indian Institute of Soil Science including their ACIPRs, Network Project on organic Farming and NRCAF including its AICRP have made significant achievements in improving soil health, promoting organic farming and agroforestry, respectively. These Institutes/AICRPs have fully achieved the physical and financial targets including GIS-based soil fertility maps, technology packages, agroforestry models, farmer trainings and demonstrations.

4.43 There has been the reduction of 11 % under the Division at BE stage for 2013-14 but the it has been noticed that BE allocation of some of the institutes/centres has been reduced by more than 11 %. When the Committee desired to know the reasons for such variations, the Department submitted that the NRM Division had proposed an allocation of Rs. 351.4 crore to meet the requirements of its Institutes/AICRPs including NICRA. An outlay of Rs. 310.00 crores in BE 2013-14 was made due to reduced overall budgetary allocation.

4.44 The reduction in allocation of the NBSS&LUP, Nagpur, CSWR&TI, Dehradun, AICRP on IFS, Modipuram, NRC on AF, ICAR Research Complex, Goa, NIASM, Baramati and NICRA was apparently due to the overall cut imposed which had to be shared by all the Institutes/AICRPs/NICRA under NRM division rationally.

4.45 In view of the reduced budgetary provisions, meetings have been held with the Directors and Project Coordinators of AICRPs to review and prioritize the proposed schemes/activities during 2013-14 to ensure taking up of important activities and achieve the target to a large extent.

4.46 In regard to utilization of funds by the Division during 2012-13, when Committee desired to know the reasons for non utilization of funds by various centres/institutes the department submitted that several approved items of works/ equipments could not be completed because of the codal formalities involved. Fund utilization is being monitored regularly. The Divisional Directors' meeting to review the utilization of funds was conducted on 11th and 12th March 2013. Fund utilization is likely to be 100% during this financial year.

(I) ANIMAL SCIENCE

4.47 Management and improvement of livestock is one of the thrust areas of Agriculture. When the Committee desired to know the schemes/projects, undertaken to improve /reproductive /proficiency/livestock and achievements during Financial Year 2012-13, the Department stated that improving productivity, production and reproductive efficiency in livestock and poultry are the major thrust areas of Animal Science Division of ICAR. These issues are addressed by the 18 animal science institutes comprising of 2 Deemed Universities, 5 Central Research Institutes, 01 National Bureau, 4 Project Directorates and 6 National Research Centers. The Division also coordinates 7 All India Coordinated Research Projects and 7 Network Research Programmes. In addition, 2 Outreach programmes and 4 mega seed projects (poultry, sheep, goat and pig) are also being operated in different parts of the country at different ICAR institutes, State Agricultural / Veterinary Universities and Non-Governmental Organizations.

4.48 The major achievements during the year 2012-13 are:

A total of 144 documented breeds of livestock and poultry registered, paternity verification kits developed, conservation of KilaKarsal sheep and Krishna valley breeds done successfully,'Mahima' a female calf has been successfully borne to handmade cloned, Garima buffalo at NDRI, Karnal, 'Noorie' unique pashmina goat cloned in J&K. indigenous sheep breeds improved through farm and field based units and elite germplasm made available to farmers flocks, Buffalo improved by field progeny testing, developed Frieswal strain yielding 3000 kg of milk per lactation, evolved new and improved backyard strains of rural poultryShrinidhi and Pratap, *d*eveloped Resource based region specific feeding schedules for coastal and rain-fed agri-eco zones, carried out Rumen microbial diversity in domesticated and wild ruminants, triplets in Muzzaffarnagri sheep achieved, twin in vitro fertilized goat kids produced, prepared database for sequential information on livestock feeds and feeding, developed vaccines against sheep and goat pox Hemorrhagic septicemia, Loop-mediated isothermal amplification (LAMP) test for rapid detection of IBR virus in bovine semen

and also for detection of PPR virus from clinical samples, recorded highly pathogenic avian influenza virus (H4N1) among exotic disease in crows in addition to chicken and ducks, malignant catarrhal fever was diagnosis in a wild bison and cattle from veterinary hospital at Bengaluru. Molecular Beacon based real-time PCR assay was developed for detection of Crimean-Congo Hemorrhagic fever, Identified H5N1 viruses, Prepared Spreadsheet modules for economic impact analysis for different diseases, produced value added products(shawls) using angora wool blended yarns and quality blankets and felts produced using sheep wool yarn, developed Value added milk products at NDRI.

4.49 The Division has been able to utilize Rs. 132.00 crore out of Rs. 194.00 crore upto January, 2013. The Committee when desired to know the reasons and steps taken by the Division for utilization of remaining funds in the remaining period of financial year, it was informed that there were several proposals regarding works and equipments under consideration/approval at different levels. However, some proposals could not be completed by that time because of the codal formalities involved. As regards steps for full utilization, all the institutes were advised for initiating necessary steps to speed up the utilization in order to achieve 100 % target. The budget utilization in different schemes is being monitored on regular basis.

4.50 During the year 2013-14 out of the proposal of Rs. 280.00 crore an outlay of 225.00 crore has approved. The Committee desired to know the extent to which various programmers/schemes are likely to be affected, due to such reduction, reasons for variations and contingency plan of the Division to overcome funds constraints. The Department in their written reply submitted that the major schemes affected due to budget reduction are conservation of indigenous animal genetic resources under Network Project on Animal Genetic Resources, Field progeny testing centres under Buffalo Network Project, genetic improvement of indigenous breeds under All India Coordinated Project on cattle, production and

distribution of improved germplasm of rural poultry under project Directorate on Poultry and the construction of new campus of central Avian Research Institute and surveillance and monitoring of disease data under Network on Gastro-intestinal Parasitism.

4.51 The budget allocated at BE stage during 2013-14 was reduced from 280.00 crores to Rs 225.00 crores which has resulted in reduced allocation for different schemes. In order to overcome the budgetary constraints it is proposed to prioritize the purchase of equipments and works to be taken up under different schemes would be barest minimum looking into the immediate need and utility. Some of the equipments would be shared between schemes. The manpower would be judiciously utilized and essential manpower and services would be out sourced for specific work

4.52 The civil works will be prioritized and around 15 % of budget under works would be spent on renovation, repair and maintenance of existing structures. The list of equipments will be prioritized and only essential equipments will be purchased in XII Plan. The Institutes have been advised to build central instrument facilities for optimal utilization and to avoid duplication to minimize the expenditure on equipments. Out of total outlay under present budgetary situation, emphasis would be given to provide more recurring expenses including scientist's contingency and provision of RA/SRFs on contract basis for facilitating the research programmes. Efforts would be made to share the skills of scientists through multidisciplinary and inter-institutional collaborations to utilize the resources more efficiently.

(J) FISHERIES

4.53 The Budgetary allocation of Rs. 85.00 crore against the proposal of Rs. 104.80 has been approved for fisheries division in the ongoing fiscal. The Committee when asked the Department the reasons for reduction in allocation of various institutes/centres of the division, its affect, steps to overcome funds constraints and also the reasons for increase in BE of Central Inland Fisheries Research Institute, Barrackpore. The Department submitted that since there was reduction in allocation of Plan Funds for ICAR, the Plan Fund allocation for Fisheries Division was re-adjusted and reduced from Rs. 104.80 crores to Rs. 85.00 crores at RE stage.

4.54 Central Marine Fisheries Institute, Kochi has been allocated Rs. 1870 lakhs against the demand of Rs. 2310 lakhs (19.05% less); Central Institute Brackishwater Acquaculture, Chennai allocation of Rs 1050 lakhs against Rs. 1310 lakhs (19.89% less); Central Institute of Fisheries Technology, Kochi Rs. 770 lakhs against Rs. 960 lakhs (19.79% less) and National Bureau of Fish Genetic Resources, Lucknow Rs. 760 lakhs against Rs. 870 lakhs (12.64% less).

4.55 As regard to impact of reduction in allocation, the Committee was informed that the shortage of funds may have some impact on some of the programms like Networking Programs on Mariculture and Aquatic Animal Health Management, Species & System diversification and intensification of culture practices in freshwater and brackishwater. To overcome shortage, for initial period, the work items and equipment of the institutes will be prioritized. The new initiatives (Network Programmes) will be initiated only during the current financial year and once enough funds are received, the anticipated progammes will be taken up.

Central Inland Fisheries Research Institute, Barrackpore has a regional centre at Guwahati, devoted for working in the NEH region. The BE of the institute has been increased, due to higher allocation under NEH programmes.

4.56 The Fisheries Division has not able to utilize more than Rs. 50.14 crore upto the end of January 2013 out of RE allocation of Rs.69.00 crore. The Committee desired to know the reasons for non utilization of funds and steps taken for utilization of balance funds in the remaining period. The Department has submitted that the process of purchase of equipment and execution of work was in progress in the Institutes during January 2013. Discussions have been held in Divisional meeting on 15th March 2013 and action has been taken for full utilization of Plan funds. Monthly monitoring of utilization of funds are being done at the Division and discussions with Directors of the institutes were held for full utilization of funds.

CROP SCIENCE

4.57 Development of new crop varieties, with improved yield and nutritional quality alongwith technical support are some of the mandate assigned to ICAR. The Committee note that for Crop Science Division an Outlay of Rs. 468.00 crore was approved against the proposal of Rs. 628.01 crore. The financial proposals of the National Institute of Biotic Stress Management, Indian Institute of Agricultural Biotechnology, Central Institute of Cotton Research, Nagpur and Indian Grassland and Fodder Research Institute, Jhansi have been drastically down-sized by almost 93.33 %, 92.5 %, 77.56 % and 64.78 % respectively. On the other hand some of the programmes and projects have received enhanced allocations at BE stage. The Department has lamented that the reduction would influence the procurement of research

materials and cost of the laboratory/field work force. Further, upon reassessment of the operational cost upward revision effected in some of the projects. Such unprofessional and casual approach at planning stage itself points towards mismanagement in the Crop Science Division which resulted in either drastically reducing the allocation or revising the cost upwards. They therefore, recommend the Department to reapprove the projects so that need based provision made for the purpose.

4.58 The Committee also notice that only 52.13 % of the funds were utilized by the Division upto January, 2013 and the factors responsible for such slow phase were time taken in completion of processing of official procedures to procure spill over equipments. To utilize the RE, the Division has made re-appropriation amongst sub-heads for Grant for Capital/Salary/General through Divisional meetings. The Committee strongly recommend the Department to strengthen the monitoring mechanism of expenditure of the Crop Science Division to ensure that the Budget Estimates allocation of the Division are fully utilized in a time bound manner.

HORTICULTURE

4.59 Genetic resource management and development of improved varieties of horticulture crop, biotic and abiotic resistance, export-value, as also standardization of technique for rapid propagation and horticulture based cropping pattern are some of the issues connected with Horticulture Division.

The Committee note that the Department have not made any changes in the proposals of the Horticulture Division for 2013-14. The Division has been able to utilize 73.86 % of their RE grant (upto January 2013). Some of the institutes like Central Institute of Sub Topical Hortiulture, Lucknow, Central Institute of Arid Horticulture, Bikaner, Central Plantatio Crops Research Institute, Kasargod and Director of Floriculture, New Delhi unable to utilize more than 26 % of their allocation upto January, 2013 which improved belatedly in the month of February, 2013. Under utilization of funds is a cause of concern to the Committee. For the purpose of finalization or reallocations, prioritization and also EFC's clearances, discussions were held in March, 2013. The Committee, desire the Department to complete the finalization of EFC / SFC and other formalities of various schemes of the Division. Further, there is an imperative need to strengthen the implementation mechanism of the Horticulture Division so that the targets assigned for of the Twelfth Five Year Plan are realised. At the same time, corrective actions need to be taken to ensure utilization of funds prudently.

AGRICULTURE EXTENSION

4.60 Agriculture Extension has a major scheme of disseminating knowledge and information to the farmers. The Krishi Vigyan Kendras during 2012-13, assessed refined and demonstrated technologies through 29,428 on-farm trials, 1.31 lakh front-line demonstrations in different farming system. Under NICRA project 100 KVKs also demonstrated climate resilient technologies through 23441 demonstrations in the country. The Committee further find that out of 632 KVKs in the country, the Department has been able to provide

Administrative buildings to 554 KVKs, trainees hostel to 490 KVKs, staff quarters to 442 KVKs, demonstration units to 394 KVKs and soil and water testing facilities to 389 KVKs. The Committee find major deficiencies in the operation of KVKs. At places they are non-operational for want of project coordinator/specialist and other administrative staff, lack of infrastructure etc. Some of KVKs have failed to extend professional advise expected from them. Bridging the yawning gap recorded at demonstration and farmers field, is another area of the concern. The Committee desire that the functioning of KVKs be relooked into and the specific pitfalls brought so in the Report be made good. At the same time, the infrastructure such as Administrative buildings, trainees hostel, staff quarters, demonstration units and soil and water testing facilities, be provided in a time bound manner in the remaining KVKs. The bottlenecks in achieving demonstration level yields at farm levels by identified and appropriate actions taken to narrow the productivity gap further. The Committee find that private participation in agriculture extension through the institutions of Krishi Vigyan Kendra (KVK) has not yielded the desired results, since the private players allegedly, pursue limited agenda of promoting their products driven by profit motives under the guise of agriculture extension. Such deficiencies were admitted by Secretary, DARE during his deposition before the Committee. Under such a scenario, the private participated KVK do not attend to major components of extension services, leaving farmers in a lurch. The holistic approach of dissemination of information and farm knowledge to farmers, through KVK, which is a guiding philosophy, is given a decent burial by the private participated KVK. The Committee view this with all the seriousness, it

deserves and would like the Department to appraise the quality and reach of extension services rendered by private players. The Committee desire that Government should ensure that KVK including private KVKs provide all the mandated activities to the farmers, without any exception. At the same time the allocations for KVKs be stepped up, so as to ensure that only State supported KVKs function, in the country.

4.61 The Committee note that the entire expenditure of the KVKs is booked under Plan Head and is reported to be the main cause for delay in making provision for infrastructure developments. They therefore, desire the Department to take up the matter with the Ministry of Finance so as to fund Krishi Vigyan Kendras from Non-Plan allocation.

4.62 During 2012-13 out of Rs. 450.00 crore RE the Division has been able to utilize only Rs. 291.26 crore upto January, 2013. This shows the tardy trend in the expenditure in the Division. The Committee desire the Department to revisit the funds utilization and monitoring mechanism of that Division so as to utilize the funds prudently so as to meet the targets of Twelfth Five Year Plan.

4.63 The Committee have observed that in the context of drought prevailing in various parts of the country, ICAR has developed a number of technologies, for drought proofing. Similarly, demonstration and training organised by CAZRI, Jodhpur and CRIDA, Hyderabad in drought affected districts of Maharashtra, Karnataka, Gujarat and Rajasthan, as part of NICRA. District level contingency plan to meet aberrant weather contingency like delay in monsoon, mid-seasonal break in monsoon, unseasonal rain, heavy

floods, cyclone, cold waves, heat waves prepared for 400 districts. While appreciating the work of ICAR in mitigating sufferings of farmers, the Committee desire that KVKs should disseminate information / knowledge in the districts under their jurisdiction, so as to contain the ill effects of drought.

AGRICULTURE EDUCATION

4.64 The Agriculture Education is being imparted in the country by 55 Agriculture Universities, 5 Deemed to be Universities and 4 Central Universities having Agricultural faculties. To promote the talent, an All India Entrance Examination for Admission to UG level course for 15 % seats and to PG level courses for 25 % seats are held annually. The ICAR supports strengthening and development of agricultural education to develop student amenities like Educational Museum, Sports complex, Smart Class Rooms, Examination Hall, Boys and Girls Hostel etc. supports to promote niche area of excellence, hands on training, Library for education quality and reforms. Due to reduced allocation no new works, purchase of equipment has been undertaken by the universities for strengthening and development of Higher Agriculture Education during the current Fiscal. The Committee appreciate the assistance being provided by the DARE/ICAR. They further desire the Department to utilize funds expeditiously and raise additional funds under the Head at RE stage.

4.65 The Committee have taken serious note of lack of enthusiasm amongst youth of the country, to take agriculture, as a career and profession, probably on the grounds of limited employment opportunities, unfavourable returns as

compared to service sector etc. This calls for introspection of whole gamut of agriculture education system in the country and employability. The Committee feel that being agrarian economy, expansion of agriculture education should not halt. The avenues of employment be raised exponentially. At the same time, policy on Central Agriculture University as recommended by the Committee each be expedited. The Committee would like to be apprised of action taken in the matter.

HUMAN RESOURCE

4.66 Development of Human Resources, is key to ushering Agriculture growth. To meet the challenge and future requirement of agriculture scientist the Department has set up CAU at Imphal and four Deemed to be Universities i.e. IARI, New Delhi IVRI, Izatnagar, NDRI, Karnal and CIFE, Mumbai. The Committee have taken note of intake and manpower of some of the Agricultural Institutes. It has been noted that there exists an annual intake capacity of 545 in CAU Imphal and 115 UG & 128 PG, 140 UG & 97 PG, 22 UG & 132 PG, and 166 at IARI, IVRI, NDRI and CIFE respectively. Against this intake, the actual enrolment in CAU Imphal is 331 which are supervision of 218 teachers/faculties. Similarly in IARI, against 241 students there are 542 teachers/faculties. In IVRI against 222 students, there are 232 teachers/faculties, NDRI against 227 there are 146 teachers/faculties and CIFE against 129 students there are 52 teachers/faculties. The Committee have a growing feeling that number of teachers/faculties engaged in all these needs to be reviewed by the Department and the Committee be apprised of the outcome thereof.

SHORTAGE OF MANPOWER

4.67 From the latest information furnished by the Department regarding the vacant position the Committee note that there are 1895 vacancies in the Scientific Cadre against the sanctioned 6472 posts. In the Technical cadre the situation is not very good it has 891 vacancies out of 6635 sanctioned posts. On Administrative side out of total 4891 posts 580 are vacant. The Divisions like Crops Science, Animal Science, NRM, Fisheries, Engineering and Education are the worst suffer of the shortage of Scientists. The Committee have been greatly concerned about the vacancies in scientific, technical and administrative cadres in ICAR and had urged upon Government to take appropriate administrative measures. However, result oriented action, has not been taken so far. 29% vacancy in scientific cadre is a great cause of concern since it directly impact the pace and quality of R&D work in Agriculture Sector. As an interim measures, ICAR should consider extension of services of scientists of proven merit, with national / international track record of research. At the same time, the Department should strengthen the existing recruitment procedure and prepare an action plan to fill the vacant posts in a time bound manner.

FARM MECHANIZATION / AGRICULTURAL ENGINEERING

4.68 Farm mechanization and availability of adequate farm power are crucial for timely farm operations, handling the crop produce, increasing production and productivity and reducing post harvest losses. With the increase in intensity of copping, the turnaround time is drastically reduced, which demands availability of adequate power for time farm operations so that land is made available for subsequent crop. Similarly, for precision

farming, increasing area under irrigation, conservation tillage, straw management and diversification of agriculture, more power is required for water lifting and precision placement / application of agricultural inputs such as seed, fertilizer, irrigation water, plant protection chemicals etc. The Committee desire that farm mechanization should be accorded a higher degree of priority so as to address the issue of scarcity of farm labour during peak agricultural season.

4.69 A sum of Rs. 75.00 crore has been allocated under Major Head Agricultural Engineering for the current Fiscal against the proposal of Rs. 99.30 crore. The demand of funds for approximately Rs. 92.00 crore was received from various units/schemes of the Division. These demands was made while the financial year 2012-13 has completed only six to eight months and therefore, the demand was on the higher side for the year 2013-14. The Committee was shocked to know that the Division has prepared their proposals on the higher side and not in realistic manner. They therefore, recommend the Department to review the Budget estimation system of Agriculture Engineering Division. The Committee noted that the Division has utilized Rs. 34.32 crore upto January, 2013 out of RE allocation of Rs. 52.00 crore while submitting clarification regarding non-utilization of funds upto 31 January, 2013 was due to less expenditure reported by certain units under establishment charges. The Committee took serious view and recommend the Department to rework on the priorities of the Division and strengthen the funds utilization mechanism so that the targets of XII Five Year Plan in respect of the Divisions are achieved in remaining period of plan.

NATURAL RESOURCE MANAGEMENT

4.70 Institutes under Natural Resource Management Division have made significant achievements in improving soil health, promoting organic farming and agroforestry. There has been the reduction of 11 % funds at RE stage. Against the proposal of 351.40 crore an outlay of Rs. 310.00 crore has allocated. The Committee noted that National Bureau of Soil Survey and Land Use Planning, Nagpur, Central Soil and Water Conservation Research & Training Institute, Dehradun, AICRP on Integrated Farming System + Organic Farming, Modipuram, NRC Agroforestry, ICAR Research Complex, Goa, NIASM, Malegaon and NICRA has registered a reduction of 34.16%, 60%, 23.52%, 20%, 33.33%, 22.5%, 21.97 and 18.18% respectively. The Committee have a growing feeling that the such a huge reduction of allocation of certain Institutes on the plea of reduction in over all allocation indicates a degree of ad-hocism in the financial management. The Committee, therefore, desire that rather than waiting till the RE stage, DARE/ICAR should reconsider the proposals of these institutes at the earliest and apprise the outcome. The Division has been able to utilize only 66.47 % of their RE allocation upto the end of January, 2013 several approved items of works / equipments could not be completed because of the codal formalities involved. They strongly recommend the Department to review their internal funds utilization mechanism at the earliest so that the funds allocated to the Division are utilized fully.

ANIMAL SCIENCE

4.71 Management and improvement of livestock is one of thrust area of Agriculture in the Country. To improve productivity, production and

reproductive efficiency in livestock and poultry are major areas which are addressed by 18 animal science institutes comprising of 2 Deemed Universities, 5 Central Research Institutes, 01 National Bureau, 4 Project Directorates and 6 National Research Centres. The Division also coordinates 7 All India Coordinated Research Projects and 7 Network Research Programmes. In addition, 2 Outreach programmes and 4 mega seed projects (poultry, sheep, goat and pig) are also being operated in different parts of the country at different ICAR institutes, State Agricultural / Veterinary Universities and Non-Governmental Organizations. Against the proposal of Rs. 280 crore an outlay of Rs. 225.00 crore BE which is 19.64 % lower has been approved. The Committee noted that programmers of Network Project on Animal Genetic Resources, Karnal, National Dairy Research Institute, Karnal including Network on Research & Development, Central Sheep and Wool Research Institute, Avikanagar, Central Institute for Research on Goats, Makhdoom, Central Institute for Research on Buffaloes, Hissar, Network on Buffaloes Hissar, National Institute on Animal Nutrition and Physiolgy, Bengaluru, NRC on Camel, Bikaner, NRC on Equine, Hissar, Veterinary Type Culture, AICRP on Cattle Research, Meerut, Central Avian Research Institute Izatnagar, Project Directorate on Poultry, Hyderabad, Network on Gastro Intestinal Parasitism, Izatnager and NRC on Mithuu, Jharnapani Nagaland Animal Science Institutes, are likely to be affected due to the lower allocation to the tune of 76.47%, 31.35%, 41.66, 50.76, 47.5%, 53.75%, 51.14%, 34.78%, 45.71%, 33.33%, 37%, 56.75%, 50%, 66.25%, funds, respectively. The projects of Animal Science Division assumes special significance, as they directly impact small and marginal farmers. The Committee, therefore, recommend

the Department to review the proposals of these Centres and consider re appropriation of funds with the Divisions so that the priority research of these Centres do not suffer in the current Fiscal.

FISHERIES

4.72 Against the proposal of Rs. 104.80 crore an outlay of Rs. 85.00 crore BE has approved. The Committee note that the allocation of Fisheries Division has reduced to 18.89 % at BE stage and there has an impact of 34.03%, reduction on the funds of Central Marine Fisheries Institutes, Kochi, 28.57% funds Central Institute Brackishwater Aquaculture, Chennai, 20.61% Central Institute of Fisheries Technology, Kochi and 20.83% National Bureau of Fish Genetic Resources, Lucknow. The shortage of funds will have impact on various important programmes like Networking Programs on Mariculture and Aquatic Animal Health Management, Species & System diversification and intensification of culture practices in freshwater and brackishwater. The Committee, therefore, desire the Department to revisit the funds requirements of these Centres and Institutes and consider their proposals before RE stage. The Committee also noted that out of allocation of Rs. 69 crore the Fisheries Division has been able to utilize only Rs. 50.14 crore upto the end of January, 2013 and to monitor the funds utilization the Division initiated action on 15 March, 2013. The Committee desire the Department to strengthen the funds utilization mechanism of Fisheries Division so that the funds allocated are fully utilized.

NEW DELHI;
17 April, 2013
27 Chaitra, 1935 (Saka)

BASUDEB ACHARIA
Chairman,
Committee on Agriculture

Annexure-I

Quarterly PAO Expenditure for the year 2012-13 under Plan

(Rs. in lakhs)

Sl.No.	Division	Revised Estimates 2012-13	1st Qtr Expenditure (Apr-Jun '12)	2nd Qtr Expenditure (Jul-Sep '12)	Progressive	3rd Qtr Expenditure (Oct-Dec '12)	Progressive	4th Qtr (upto Feb'13)	Progressive
1	Crop Science	41300.00	25000.01	0.00	25000.01	1500.00	26500.01	14276.72	40776.73
2	Horticulture	#REF!	12000.00	0.00	12000.00	0.00	12000.00	1395.66	13395.66
3	Agril. Extension	#REF!	25350.01	0.00	25350.01	6500.00	31850.01	6735.25	38585.26
4	Agril. Education	54600.00	29150.00	0.00	29150.00	2800.00	31950.00	3780.00	35730.00
5	Agril. Eco. Stat.	350.00	250.00	0.00	250.00	0.00	250.00	100.00	350.00
6	Agril. Engg.	5200.00	3900.00	0.00	3900.00	0.00	3900.00	920.00	4820.00
7	ICAR Hdqrs.	9600.00	10000.00	0.00	10000.00	1000.00	11000.00	-1400.00	9600.00
8	NFBSFARA	5500.00	4000.00	0.00	4000.00	0.00	4000.00	1500.00	5500.00
9	NAIP/EAP	15000.00	6550.00	0.00	6550.00	4000.00	10550.00	203.00	10753.00
10	CSWRC&TI	300.00	350.00	0.00	350.00	0.00	350.00	-50.00	300.00
11	Other NRM Instts.	18200.00	13500.00	0.00	13500.00	1500.00	15000.00	2790.27	17790.27
12	CRAI / NICRA	7500.00	5500.00	0.00	5500.00	1000.00	6500.00	1000.00	7500.00
13	Animal Science	19400.00	12500.02	0.00	12500.02	1000.00	13500.02	5091.61	18591.63
14	Fisheries	6900.00	5150.00	0.00	5150.00	1000.00	6150.00	750.00	6900.00
	Total: ICAR	**#REF!**	**153200.04**	**0.00**	**153200.04**	**20300.00**	**173500.04**	**37092.51**	**210592.55**
DARE									
1	CAU, Imphal	8500.00	2600.00	2600.00	5200.00	2858.00	8058.00	0.00	8058.00
2	CAU, Barapani	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
3	CAU, Bundelkhand	99.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
4	CAU, Bihar	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
5	Other Programmes	50.00	4.71	19.64	24.35	16.72	41.07	0.00	41.07

	Total: DARE	**8650.00**	**2604.71**	**2619.64**	**5224.35**	**2874.72**	**8099.07**	**0.00**	**8099.07**
	Total ICAR + DARE	**#REF!**	**155804.75**	**2619.64**	**158424.39**	**23174.72**	**181599.11**	**37092.51**	**218691.62**

Note: Excess drawn funds of Rs. 14.00 Cr and .50 Cr in r/o ICAR Hqrs and CSWCR&TI, respectively, was refunded as their RE were reduced.

Annexure-II

Quarterly PAO Expenditure for the year 2012-13 under Non-Plan

(Rs. in lakhs)

Sl.No.	Division	Revised Estimates 2012-13	1st Qtr Expenditure (Apr-Jun '12)	2nd Qtr Expenditure (Jul-Sep '12)	Progressive	3rd Qtr Expenditure (Oct-Dec '12)	Progressive	4th Qtr (upto Feb'13)	Progressive
1	Crop Science	62187.00	36731.33	0.00	36731.33	10446.39	47177.72	13848.85	61026.57
2	Horticulture	24233.00	15005.10	0.00	15005.10	4267.44	19272.54	4818.08	24090.62
3	Agril. Extension	390.00	214.07	0.00	214.07	60.88	274.95	72.05	347.00
4	Agril. Education	4654.00	3357.68	0.00	3357.68	954.92	4312.60	341.40	4654.00
5	Agril. Eco. Stat.	3287.00	2156.59	0.00	2156.59	613.33	2769.92	517.08	3287.00
6	Agril. Engg.	7950.00	4839.91	0.00	4839.91	1376.47	6216.38	1732.62	7949.00
7	ICAR Hdqrs.	14194.00	8178.92	0.00	8178.92	2326.09	10505.01	3179.11	13684.12
8	CSWRC&TI	3254.00	2002.00	0.00	2002.00	569.37	2571.37	5406.28	7977.65
9	Other NRM Instts.	25677.00	16056.82	0.00	16056.82	4566.57	20623.39	52.96	20676.35
10	Animal Science	41465.00	24287.66	0.00	24287.66	6907.41	31195.07	9065.35	40260.42
11	Fisheries	21799.00	12636.17	0.00	12636.17	3593.73	16229.90	5252.30	21482.20
	Sub-Total: Non-Plan ICAR	**209090.00**	**125466.25**	**0.00**	**125466.25**	**35682.60**	**161148.85**	**44286.08**	**205434.93**
1	AP Cess funds	50.00	0.00	0.00	0.00	50.00	50.00	0.00	50.00
	Grand Total: Non-Plan ICAR	**209140.00**	**125466.25**	**0.00**	**125466.25**	**35732.60**	**161198.85**	**44286.08**	**205484.93**
1	DARE-Secretariat	377.00	113.43	90.00	203.43	88.23	291.66	63.87	355.53
2	Contribution	483.00	0.00	5.25	5.25	34.47	39.72	-0.10	39.62
	Total: DARE (Non-Plan)	**860.00**	**113.43**	**95.25**	**208.68**	**122.70**	**331.38**	**63.77**	**395.15**
	Total: ICAR + DARE	**210000.00**	**125579.68**	**95.25**	**125674.93**	**35855.30**	**161530.23**	**44349.85**	**205880.08**

Annexure-III

Demand No. 2- DERPARTMENT OF AGRICULTURAL RESEARCH AND EDUCATION

Statement showing Monthly Expenditure Plan for 2012-13

Month	Plan	Non-plan	Total	Cummulative Total
APrii	52499	36012	88511	88511
May	0	164	164	8867
June	105651	89870	195521	284196
July	0	'163	163	284359
August	2850	164	3014	287373
September	0	163	163	287536
October	79200	36037	115237	402773
November	0	164	164	402937
December	2600	164	2764	405701
January	76600	53972	130572	536273
February	2600	164	2764	539037
March	0	163	163	539200
Total BE 2012-13	322000	217200	539200	

Annexure-IV

Major schemes/projects undertaken in Horticulture Science in terms of physical and financial progress

S. No.	Name of Scheme/ Programme	Targets	Achievements
1	**2**	**3**	**4**
1.	**Main Scheme-** **IIHR, Bangalore** **Including two out reach progs.** • *Leaf spot diseases* • *Sap Sucking Pests* **Sub-scheme-** i. NRCB ii. NRCC	• Enrichment of field gene bank • Development of improved varieties. • Development of suitable technologies for improving input use efficiency and reducing cost of cultivation. • Development of eco-friendly IPM modules.	• Trait specific explorations for regularity and bunch bearing in mango (2), 3 scion cultivars of sweet orange, mandarin, one salt tolerant in banana and one with high potential for juice making in grapes were collected. • Two varieties one each of guava and papaya were identified with superior horticultural traits. • A high yielding clone of jackfruit isolated. • Site specific nutrient management schedule worked out in sweet orange. • The IPM schedule developed for litchi, grapes, citrus

	iii. AICRP (TF**)**		
	2. CISH, Lucknow NRCG CITH including Network NRCL AICRP (STF)	• Collection, conservation and evaluation of genetic resources. • Development of high yielding and superior quality varieties • Standardization of agro techniques for fruits and vegetables.	• Two trait specific lines (red peel and pink flesh) in Guava, seven exotic collections of litchi, were collected. • Double hedge row system of planting worked out for guava. • Site specific nutrient management schedule developed in mango and guava.
3.	**Main schemeCIAH, Bikaner** **Sub-schemes** NRC Pomegranate, Solapur AICRP on AZF	• Collection, conservation and evaluation of genetic resources • Development of suitable varieties for higher yield and quality. • Standardization of agro-techniques including fertigation, organic farming and development of suitable IPM schedules. Post harvest handling, processing and development of value added products.	• Eight new germplasm collections of arid fruit crops,which includes early maturing ber (2) and aonla (2), prolific bearer bael (2) were added into repository. • Two varieties namely Thar Sevika and Thar Bhubhraj were promoted. • Arid fruits and vegetable based cropping systems standardized. • Drip irrigation system standardized for arid fruit crops. • IPM schedules worked out for ber, aonla

4.	**Main SchemeIIVR, Varanasi** **Sub-schemes** Directorate of Mushroom Research, Solan Directorate of Onion & Garlic, Rajgurunagar including network AICRP Vegetables including NSP AICRP Mushroom	• Collection, conservation and evaluation germplasm of vegetables and mushroom. • Development of suitable varieties of different vegetables for biotic and abiotic resistant. • Standardization of organic farming in vegetables. • Development of suitable IPM modules. • Development of techniques for increasing shelf life of produce. • Demonstration of varieties and technologies on farmers' field.	• 12 new lines of brinjal, 6 lines of bottle gourd, 10 lines of tomato, 5 types of mushrooms collected and maintained for evaluation. • Genetic material of 4 underexploited vegetables (leafy types) was purified. • The IPM schedules for cucurbitaceous crops were standardized. • Water and nutrient management modules were developed for tomato and brinjal. • Seed germination enhancement techniques were also standardized. Low cost technologies based local agricultural wastes were developed for production of mushroom for different regions.

5.	**Main Scheme** **CPRI, Shimla** **Sub-Schemes** CTCRI, Trivandrum AICRP Potato AICRP Tuber crops	• Survey, collection and conservation of genetic resources. • Development of potato varieties for early maturity, late blight resistance and chip making. • Development of technology for integrated management of pest and diseases. • Standardization of techniques for value added products.	• In tuber crops, 14 indigenous, 3 exotic accessions of sweet potato and 19 yams were collected. • Kufari Frysona variety for French fry developed. • *Protocol for In-vitro* conservation of potatoes standardized. • Decision support system and Disease forecasting modules developed. • Vegetable based intercropping systems tested with garlic.
6.	**Main schemeCPCRI, Kasaragod** **Sub schemes** Directorate of Cashew Research,	• Germplasm conservation of coconut, arecanut, cacoa, cashew and oil palm. • Identification of high yielding varieties with desirable traits. • Molecular characterization of germplasm. • Development of coconut	• A total of 18 accessions in coconut and oil palm were collected. • New varieties of coconut namely Kalpatharu, Kalpa Samrudhi were identified for release. • PGPR were identified for foliar disease management in coconut. • Areca nut based cropping system model with spices and banana were validated.

	Puttur Directorate of Oil Palm Research, Pedavegi AICRP on Palms. AICRP on Cashew.	based farming systems. • Development of horticultural tools for improving farm efficiency.	• The coconut based inter cropping was also standardized.
7.	**CARI Portblair**	• Conservation of germplasm of various horticulture crops. • Feasibility evaluation of buffaloes rearing. • Standardization of production technologies of flowers and vegetables.	• Standardized low cost rearing technology of pig. • Demonstrated water resource development through rain water management on large scale. • Released two varieties of coconut and one of areca nut. • Standardized technique for cage culture in creeks and bays. • Feasibility evaluation of buffaloes rearing in Island ecosystem. • Demonstrated water resource development through rain water management on large scale.
8.	**Main schemeIISR, Calicut** Including	• Collection conservation and evaluation of germplasm of spices. • Identifying high yield, disease resistant and	• 48 accessions of different spices (ginger, turmeric, seed spices) germplasm were added in repository for evaluation purpose.

	Outreach Phytophthora, fusarium and ralstonia **Sub-Schemes** NRC Seed Spices Aimer AICRP on Spices	processing varieties of spices. • Development of spices based cropping systems. •	• New strains of PGPR isolated and purified for biological control in spices. • Turmeric processing technology developed. • Mulching technology with black polythene reduced chilli wilt and increased yield.
9.	**Main schemeDirectorate of Floriculture Research, New Delhi** including AICRP on Floriculture **Sub schemes** NRC Orchids, Sikkim Directorate of	• Collection, evaluation and assessment of germplasm and unexplored flowers • Development of new and improved varieties in rose, gladiolus, chrysanthemum, tuberose and gerbera, orchids. • Technologies for flower crop production including control of pests and diseases and post harvest management. • Enrichment of field collection block of medicinal and aromatic plants. • Development of package of	• 9 germplasm lines of chrysanthemum, 12 carnation and 6 orchids were collected for further evaluation. • Conservation of 46 rare and endangered species of orchid in clonal repository. • 8 New Germplasm accessions of giloy and tulsi were collected. • New Gladiolus cultivar Arka Kesar recommended for commercial cultivation. • Gerbera-Arka Krishna, Rose-Arka Parimala and carnation-Arka Flame were released for commercial cultivation. • Vasana Kapoori a Betelvine cultivar was identified. • Integrated nutrient management schedule for commercial flower crops

	Medicinal & Aromatic Plant Research, Anand Network on Medicinal & Aromatic Plants & Betelvine	practices for various medicinal plants.	worked out were developed. • Good agricultural practices and good field collection practices were standardized for various medicinal plants. • Schedule for management of Anthracnose of orchid worked out

Annexure V

List of districts for which contingency plans are completed so far (400)

S. No.	State	Names of Districts completed	Number of districts
1	Andhra Pradesh	Guntur, Chittoor, East Godavari, Adilabad, Kadapa, Krishna, Kurnool, Mahaboobnagar, Medak, Nalgonda, Nellore, West Godavari, Srikakulam, Anantapur, Karimnagar, Khammam Prakasam, Rangareddy, Visakhapatnam, Warangal, Nizamabad, Vizayanagaram	22
2	Karnataka	Bagalkot, Udupi, Bengaluru, Bidar, Koppal, Bijapur, Dharwad, Gulbarga, Gadag, Raichur, Chickballapur, Chickmagalur, Dakshina kannada, Davangere, Kolar, Mandya, Shimoga, Chamarajnagar, Ramanagara, Tumkur, Belgaum, Haveri, Uttara Kannada, Mysore, Bellari, Yadgir, Chitradurga, Hassan, Kodagu	29
3	Kerala	Kozhikode, Palakkad, Kollam, Ernakulam, Waynad, Trissur, Alapuzha, Kannur, Pathanamthitta, Trivendrum, Malappuram, Kottayam, Kasargod, Idukki	14
4	Tamil Nadu	Kancheepuram, Thiruvallur, Vellore, Caddalore, Erode, Karur, Dindigal, Theni, Thanjavur, Tiruchirapalli, Pudukkottai, Thirunelvelli, Thoothukudi, Thiruvarur, Tiruppur, Thiruvannamalai, Krishnagiri, Coimabattore, Dharmapuri, Kanyakumari, Nagapattinam, Namakkal, Nilgiris, Peramballur, Ramanathapuram, Salem, Ariyallur, Sivaganga, Viluppuram, Virudhunagar, Madhurai	31
5	Gujarat	Banaskantha, Mehsana, Junagadh, Bhavnagar, Jamnagar, Porbandar, Surendranagar, Kutch Patan, Sabarkantha, Anand, Dahod, Panchamahals, Vadodara, Bharuch, Dangs, Narmada	25

		Navsari, Valsad, Amreli, Surat, Tapi, Rajkot, Ahmedabad, Kheda	
6	Maharashtra	Akola, Buldhana, Gondia, Washim, Amravathi, Chandrapur, Nagpur, Yavatmal, Wardha, Bhandara, Gadchiroli, Sangli, Nandurbar, Dhule, Solapur, Jalgaon, Nasik, Satara, Ahmednagar, Kolhapur, Pune, Thane, Raigarh, Ratnagiri, Sindhudurg, Aurangabad, Beed, Hingoli, Parbhani, Jalna, Nanded, Osmanabad, Latur	33
7	Madhya Pradesh	Badawani, Bhopal, Burhanpur, datia, Dewas, guna, Gwalior, Jabhua, Khandwa, Khargone, Mandsour, Morena, Neemach, Raigarh, ratlam, sehore, shajapur, shoepur, shivapuri, Ashoknagar, Bhind, dhar, Ujjain, Indore	24
8	Rajasthan	Kota , Sikar, Jhunjhunu, Sriganganagar, Jhalawar, Nagaur, Jaipur, Tonk, Ajmer, Chittorgarh, Udaipur, Bhilwar, Rajsamand, Baran, Bundi, Jodhpur, Dausa, Barmer, Jaisalmer, Jalore, Bikaner, Churu Banswara, Dungarpur, Hanumangarh, Alwar, Bharatpur, Sawai madhapur, Dholpur, Karauli, Pali, Pratapgarh, Sirohi	33
9	Haryana	Hisar, Karnal, Faridabad, Kurukshetra, Panipat, Sirsa, Jhajjar, Sonipat, Rewari, Mahendragarh, Jind, Bhiwani, Fatebad, Gurgaon, Ambala, Kaithal, Panchkula, Rohtak, Yamunanagar	19
10	Punjab	Amritsar, Bathinda, Faridkot, Hoshiarpur, Ludhiana, Barnala, Gurudaspur, Moga, Jalandhar Mansa, Patiala, Ropar, Sangrur, Ferozpur, Fatehgarh Sahib, Tarntarn, Kapurthala, SriMuktsar Sahib, SBS Nagar	19
11	Orissa	Angul, Cuttack, Deogarh, Kalahandi, Nayagarh, Puri, Sambalpur, Sonapur, Sundargarh, Bargarh, Bhadrak, Bolangir, Gajapati, Ganjam, Boudh, Malkangiri, Dhenkanal, Jagatsinghpur, Jajpur, Jharsuguda, Kandhamal, Koraput, Nuapada, Mayurbhanj, Keonjhar, Rayagada, Balasore, Kendrapara, Khurda, Nabaranaga	30
12	West Bengal	Birbhum, Hooghly, Murshidabad, North 24 Parganas, Bankura, Purulia, Nadia, Bardhaman, South 24 paraganas, Pashim Medinipur, East Medinipur, Howrah, Jalpaiguri, Darjeeling, Dakshin Dinajpur,	18

		Malda, Uttar Dinajpur, Coochbehar	
13	Uttar Pradesh	Badaun, Baghpat, Bareily, Bijnor, Bulandshahar, Muzaffanagar, Pilibhit, Rampur, Saharanpur, Shahjahanpur, Deoria, Ghazipur, Gorakhpur, Jaunpur, Kushinagar, Maharajganj, Sant Ravidas Nagar, Chandauli, Mirzapur, Sonbadhra, Varanasi, Ghaziabad, Moradabad, Meerut, Jyotiba Phule Nagar, Gautam Budh nagar	26
14	Assam	Cachar, Dhemaji, Lakhimpur, Dibrugarh, Kokrajhar, Karimganj, Sonitpur, Golaghat, Bongaigaon, Dhubri, Kamrup, Karbi Anglong, Nagaon, Nalbari, Sivasagar, Tinsukia, Hailakandi, Barpeta, Darrang, Jorhat	20
15	J & K	Anantnag, Bandipora, Baramulla, Budgam, Ganderbal, Kargil, Kulgam, Kupwara, Leh, Pulwama, Shopian, Srinagar	12
16	Bihar	Aurangabad, Dharbhanga, Samastipur, Nawada, Saharsa, Katihar, Jamui, Gopalganj, Saran	9
17	Chattisgarh	Bastar, Bijapur, Kabirdham, Raigarh, Raipur, Rajnandgaon, Durg, Janjgir	8
18	HP	Una, Bilaspur, Hamirpur, Kangra, Kullu, Lahul & spiti, Mandi, Sirmaur	8
19	Jharkhand	Garhwa, Palamu, Chatra, Deoghar, East Singhbhum, Godda, Hazaribagh, Jamtara, Koderma, Lohardaga, Pakur, Ranchi, Sahibganj, Saraikela, Simdega, West Singhbhum	16
20	Sikkim	East Sikkim,North Sikkim,South Sikkim,West Sikkim	4
	TOTAL		**400**

Annexure VI

Details of Discipline wise intake capacity of the 4 ICAR Deemed-to-be-Universities, the actual students enrolled in each of the disciplines and the number of teachers/ faculties engaged by Deemed Universities.

1. INDIAN AGRICULTURAL RESEARCH INSTITUTE (IARI), PUSA NEW DELHI

Sl.No.	Discipline	Masters		Ph.D		No. of Faculties Engaged
		Intake Capacity	Actual Enrollment	Intake Capacity	Actual Enrollment	
1.	Agricultural Chemicals	6	6	6	5	15
2.	Agricultural Economics	5	5	5	5	11
3.	Agricultural Engineering	6	6	7	7	16
4.	Agricultural Extension	5	5	6	5	17
5.	Agricultural Physics	3	3	4	3	15
6.	Agricultural Statistics	7	7	9	9	33
7.	Agronomy	5	5	4	8*	22
8.	Biochemistry	4	4	4	3	10
9.	Computer Application	7	7	-	-	16
10.	Entomology (Agri. Entomology)	4	4	6	9*	19
11.	Environmental Sciences	5	5	5	5	16
12.	Genetics	5	5	7	8*	49
13.	Horticulture	8	8	11	11	48
14.	Microbiology	5	5	5	5	17
15.	Molecular Biology & Biotechnology	5	5	5	5	28
16.	Nematology	3	3	4	4	16
17.	Plant Genetics Resources	4	4	5	5	66
18.	Plant Pathology	5	5	7	6	30

19.	Plant Physiology	4	4	5	4	15
20.	Seed Science & Technology	4	4	6	6	24
21.	Soil Science & Agril. Chemistry	4	4	7	7	17
22.	Water Science & Technology	2	2	4	3	09
23.	Post-Harvest Technology	3	3	6	5	10
24.	Bioinformatics	6	4	-	-	23
Total		**115**	**113***	**128**	**128**	**542**

*****Difference in no. of seats available and actual seats filled in some disciplines is due to transfer of seats in SC/ST/OBC/PH category.

2. INDIAN VETERINARY RESEARCH INSTITUTE (IVRI), IZATNAGAR, BAREILLY (U.P.)

Sl.No.	Discipline	Masters		Ph.D		No. of Faculties Engaged
		Intake Capacity	Actual Enrollment	Intake Capacity	Actual Enrollment	
1.	Animal Genetics and Breeding	8	8	6	4	10
2.	Animal Nutrition	8	8	6	6	13
3.	Veterinary Animal Physiology	7	7	4	4	8
4.	Animal Biochemistry	7	4	5	5	11
5.	Animal Biostatistics	4	4	2	2	6
6.	Animal Biotechnology	8	7	7	5	20
7.	Epidemiology	3	3	-	-	3
8.	Veterinary Extension Education	5	5	4	4	7
9.	Livestock Product Technology	4	4	3	2	4
10.	Poultry Science	10	10	7	5	29

11.	Veterinary Bacteriology	6	6	5	5	11
12.	Veterinary Gynecology & Obstetrics	7	6	5	5	10
13.	Veterinary Immunology	6	6	3	2	9
14.	Veterinary Medicine	7	7	6	5	8
15.	Veterinary Parasitology	8	8	5	5	17
16.	Veterinary Pathology	8	8	6	6	11
17.	Veterinary Pharmacology	6	6	5	4	7
18.	Veterinary Public Health	6	6	5	5	9
19.	Veterinary Surgery & Radiology	7	7	4	4	10
20.	Veterinary Virology	8	8	6	6	19
21.	Livestock Production & Management	5	5	3	3	8
22.	Livestock Economics	2	2	-	-	2
Total		**140**	**135**	**97**	**87**	**232**

3. NATIONAL DAIRY RESEARCH INSTITUTE (NDRI), KARNAL, HARYANA

Sl.No.	Discipline	Masters		Ph.D		No. of Faculties Engaged
		Intake Capacity	Actual Enrollment	Intake Capacity	Actual Enrollment	
1.	Dairy Microbiology	8	8	8	10*	12
2.	Dairy Chemistry	7	7	6	6	8
3.	Dairy Technology	8	9*	8	8	13
4.	Dairy Engineering	3	3	0	0	4
5.	Animal Biochemistry	10	7	9	10*	9

6.	Animal Genetics & Breeding	9	11*	10	11*	8
7.	Livestock Production & Management	8	8	7	8*	12
8.	Animal Nutrition	11	11	13	7	11
9.	Animal Physiology	7	7	6	6	12
10.	Dairy Economics	10	10	5	3	11
11.	Dairy Extension Education	9	8	10	11*	11
12.	Animal Biotechnology	10	11*	10	11*	11
13.	Forage Production	4	4	-	-	3
	Sub Total	**104**	**104**	**92**	**91**	**125**
Courses offered and number of seats for admission at Southern Regional Station, NDRI, Bangalore, Karnataka						
1.	Dairy Chemistry	1	1	1	1	2
2.	Dairy Technology	5	5	5	5	4
3.	Dairy Engineering	3	3	2	3	2
4.	Animal Genetics & Breeding	2	2	2	2	2
5.	Livestock Production & Management	1	1	-	-	2

6.	Animal Nutrition	1	1	-	-	1
7.	Diary Economics	1	1	1	1	2
8.	Diary Extension	1	1	-	-	1
	Sub total	**15**	**15**	**11**	**12**	**16**
	Total (Karnal+ Bangalore)	**119**	**119**	**103**	**103**	**141**
Courses offered and number of seats for admission at Eastern Regional Station, NDRI, Kalyani, West Bengal						
1.	Livestock Production & Management	**1**	1	-	-	1
2.	Animal Nutrition	**2**	2	-	-	2
3.	Animal Biotechnology	**1**	1	-	-	1
4.	Dairy Economics	**1**	1	-	-	1
	Sub Total	**5**	**5**	-	-	**5**
	Grand Total	**124**	**124**	-	-	**146**

*Increase in number is due to nomination of foreign/ in-service students.

4. CENTRAL INSTITUTE OF FISHERIES EDUCATION (CIFE), MUMBAI, MAHARASHTRA

Sl.No.	Discipline	Masters		Ph.D		No. of Faculties Engaged
		Intake Capacity	Actual Enrollment	Intake Capacity	Actual Enrollment	
1.	Fisheries Resources	8	9	6	7	5

	Management					
2.	Aquaculture	12	14	9	11	9
3.	Fisheries Extension	6	6	2	3	4
4.	Aquatic Environmental Management	6	7	2	3	5
5.	Post-Harvest Technology	7	8	4	7	6
6.	Genetics and Breeding	6	6	3	1	4
7.	Fish Physiology and Biochemistry	6	6	2	2	3
8.	Fish Nutrition and Feed Technology	6	6	3	3	3
9.	Aquatic Animal Health Management	8	8	4	5	7
10.	Fish Biotechnology	6	6	3	3	3
11.	Fisheries Economics	6	6	1	2	3
	Total	**77**	**82***	**39**	**47***	**52**

*****The difference in intake is due to additional admission of in-service candidates/ fellowship holders of DST-INSPIRE/ICAR-SRF/Overseas students as per ICAR guidelines.

APPENDIX -I

COMMITTEE ON AGRICULTURE

(2012-13)

MINUTES OF THE TWENTY FIRST SITTING OF THE COMMITTEE

*****

The Committee sat on Monday, the 01 April, 2013 from 1100 hours to 1305 hrs. and from 1400 hrs to 1705 hours in Room No. '53', Parliament House, New Delhi.

PRESENT

Shri Basudeb Acharia - Chairman

MEMBERS

LOK SABHA

2. **Shri Narayansingh Amlabe**
3. **Shri Premdas Katheria**
4. **Sardar Sukhdev Singh Libra**
5. **Dr. Jyoti Mirdha**
6. **Shri Naranbhai Kachhadia**
7. **Shri Devji M. Patel**
8. **Shri Patel Kishanbhai V.**
9. **Shri Hukamdeo Narayan Yadav**

RAJYA SABHA

10. **Smt. Mohsina Kidwai**
11. **Shri Rajpal Singh Saini**
12. **Shri Darshan Singh Yadav**

SECRETARIAT

1. Shri R.S. Kambo - Joint Secretary

WITNESSES

MINISTRY OF AGRICULTURE
(DEPARTMENT OF AGRICULTURAL RESEARCH AND EDUCATION)

S.No.	NAME OF THE OFFICER	DESIGNATION
1.	Dr. S. Ayyappan,	Secretary (DARE) & DG (ICAR)
2.	Shri Arvind R. Kaushal,	AS (DARE) & Secretary (ICAR)
3.	Shri P.K. Pujari,	AS & FA (DARE/ICAR)
4.	Dr. S.N. Puri,	VC, CAU, Imphal
5.	Dr. Swapan K. Datta,	DDG (CS)
6.	Dr. K.M.L. Pathak,	DDG (AS)
7.	Dr. K.D. Kokate,	DDG (Extn.)
8.	Dr. M.M. Pandey,	DDG (Engg.)
9.	Dr. Arvind Kumar,	DDG (Edn.)
10.	Dr. B. Meenakumari,	DDG (Fy.)
11.	Dr. N.K. Krishna Kumar,	DDG (Hort.)
12.	Dr. D. Rama Rao,	ND (NAIP)
13.	Dr. A.K. Vasisht,	ADG (PIM)
14.	Dr. T.P. Rajendran,	ADG(PP), ICAR
15.	Dr. R.K. Tomar,	RFD Coordinator, ICAR

PLANNING COMMISSION

Dr. Surinder Singh, Adviser (Agriculture)

2. At the outset, the Chairman welcomed the members of the Committee and representatives of the Ministry of Agriculture (Department of Agricultural Research and Education) and Planning Commission to the Sitting.

3. After the witnesses introduced themselves, the Secretary briefly highlighted the activities / achievements made by the Department during the Eleventh Plan Period and preceding Financial Year. The proposed outlay for Twelfth Plan, including various schemes to be taken up was also discussed. The Committee, thereafter, took oral evidence of the representatives of Ministry of Agriculture (Department of Agricultural Research and Education) on Demands for Grants (2013-14) of the Department.

[At around 1305 hours the Committee adjourned for Lunch. The Sitting resumed at 1400 hours]

4. The Chairman and members of the Committee raised queries on several issues concerning progress made and the Demands for Grants of the ongoing Fiscal and proposed projection for Financial Year 2013-14. The witnesses replied, thereto.

5. The Chairman, thereafter thanked the witnesses for appearing before the Committee as well as for furnishing valuable information desired by them. He also directed them to furnish information on points on which the Department could not clarify during the Sitting, to the Committee Secretariat by 08 April, 2013.

6. A verbatim record of the proceedings has been kept separately.

The Committee then adjourned.

APPENDIX - II

COMMITTEE ON AGRICULTURE

(2012-13)

MINUTES OF THE TWENTY FIFTH SITTING OF THE COMMITTEE

The Committee sat on Wednesday, the 17th April, 2013 from 1500 hours to 1600 hours in Room No. '53', Parliament House, New Delhi.

PRESENT

Shri Basudeb Acharia - Chairman

MEMBERS

LOK SABHA

2. Shri Narayansingh Amlabe
3. Shri Sanjay Singh Chauhan
4. Smt. Ashwamedh Devi
5. Smt. Paramjit Kaur Gulshan
6. Shri P. Kumar
7. Dr. (Smt.) Botcha Jhansi Lakshmi
8. Sardar Sukhdev Singh Libra
9. Dr. Jyoti Mirdha
10. Dr. Vinay Kumar Pandey 'Vinnu'

RAJYA SABHA

11. Shri Dharmendra Pradhan
12. Dr. K.V.P. Ramachandra Rao
13. Shri Shivanand Tiwari
14. Shri S. Thangavelu
15. Shri Darshan Singh Yadav

SECRETARIAT

1. Shri R.S. Kambo - Joint Secretary
2. Shri C. Vanlalruata - Deputy Secretary

2. At the outset the Chairman welcomed the members to the Sitting of the Committee. They Committee, thereafter, took up the following draft Report(s) for consideration:

(i) xxxx xxxx xxxx xxxx xxxx

(ii) draft Report Demands for Grants (2013-2014) relating to the Ministry of Agriculture (Department of Agricultural Research and Education); and

(iii) xxxx xxxx xxxx xxxx xxxx

3. After some deliberations, the Committee adopted the above draft Report(s) with some modifications. They also authorized the Chairman to finalise the above Draft Report(s) in the light of the factual verifications got done by the concerned Departments of the Ministry of Agriculture and present them to the Parliament.

The Committee then adjourned.

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*** Matter not related with this Report**