

MINISTRY OF AGRICULTURE AND FARMERS' WELFARE

DEMAND NO. 2

Department of Agriculture Research and Education

1. Agricultural Extension (CS)

2019-20	OUTPUTS 2019-20			OUTCOMES 2019-20		
	Output	Indicators	Targets 2019-20	Outcome	Indicators	Targets 2019-20
221.15	1. Training of farmers and extension personnel for creating awareness on upcoming technologies	1.1 Number of farmers, farm women and extension personnel trained by KVKs (In lakh)	15.2	1. Greater adoption of agro-ecosystem specific relevant technologies for farmer-centric growth	1.1 Adoption rate (%) of new technologies	10%
	2. On- farm testing to identify the location specificity of agricultural technologies	2.1 No. of On-farm trials conducted by KVKs	28888			
	3. Frontline demonstration to establish the production	3.1 No. of Frontline demonstrations conducted by	110112			

	potential of improved agricultural technologies	KVKs				
	4. Enhanced production of seeds and planting materials	4.1 Quantity of seeds produced (t)	21000			
		4.2 No. of planting materials (In lakh)	231.50			
	5. Enhanced production of livestock strains and fingerlings	5.1 No. of livestock strains and fingerlings produced (In lakh)	119.00			
	6. Analysis of soil and water samples	6.1 No. of soil & water samples tested (In lakh)	3.05			

2. Agricultural Engineering (CS)

FINANCIAL OUTLAY (Rs in Cr)	OUTPUTS 2019-20			OUTCOMES 2019-20		
	2019-20	Output	Indicators	Targets 2019-20	Outcome	Indicators
64.02	1. Development/ refinement of technologies/ equipment/ machines for farm mechanization for reducing drudgery, maintaining timeliness in farm operations, processing and energy management in agriculture.	1.1 No. of technology/ machines developed.	11	1. Enhanced level of farm mechanization	1.1 Expected Increase in input use efficiency (%)	2%
	2. Development of technology/ process protocol/ product for processing and value addition of the agro-produce.	2.1 No. of process protocols for value addition developed	3			
		2.2 No. of New value added products developed	3			
	3. Field evaluation and front line demonstration of the newly developed/ improved prototypes.	3.1 No. of front line demonstrations of improved prototypes	20			
		3.2 No. of machine, samples to be tested	400			
	4. Training of the farmers, entrepreneurs for custom hiring, utilization and maintenance of equipment/ machines related to farm mechanization, processing and value addition.	4.2 No. of farmers to be trained	110			
		4.3 No. of custom hiring and Entrepreneurs training.	10			

3. Natural Resource Management (NRM) and NICRA (CS)

FINANCIAL OUTLAY (Rs in Cr)	OUTPUTS 2019-20			OUTCOMES 2019-20		
2019-20	Output	Indicators	Targets 2019-20	Outcome	Indicators	Targets 2019-20
159.48	1. Soil Inventory and characterization	1.1 Total Number of Block level land resource inventory developed	6	1. Productivity gain due to efficient and cost-effective management of natural resources	1.1 % Increase in crop productivity	2%
	2. Testing of soil and water conservation measures for supplementary irrigation	2.1 Total number of soil & water conservation technologies developed	5			
	3. Development of system based farm production technologies	3.1 Total number of system-based farm production technologies developed	10			
	4. Development of organic farming packages	4.1 Total number of organic farming packages of practices developed	3			
	5. Development and demonstrations of climate resilient technologies	5.1 Total number of climate resilient technologies developed and demonstrated	5			
	6. Development of technologies for managing soil health	6.1 Number of technologies developed on managing soil health	5			
	7. Design and development of technologies for irrigation water management	7.1 Number of technologies developed for irrigation water management	5			

4. Horticulture Science (CS)

FINANCIAL OUTLAY (Rs in Cr)	OUTPUTS 2019-20			OUTCOMES 2019-20		
2019-20	Output	Indicators	Targets 2019-20	Outcome	Indicators	Targets 2019-20
178.34	1. Collection of germplasm	1.1 No of germplasm	500	1. Increase in potential productions and productivity of fruits and vegetables	1.1 Percentage increase in potential productivity of fruits and vegetables	2%
	2. Characterization of germplasm	2.1 No of germplasm	580		2. Introduction of new varieties of fruits and vegetables	2.1 Enhanced potential gross production of horticultural crops (%)
	3. Development of pre-breeding lines	3.1 No of pre-breeding lines	110	3. Reduced potential crop losses due to improved breeder seeds		2.2 Increase in Potential area covered under new varieties of horticulture crops (%).
	4. Identification of promising / elite breeding lines	4.1 No of promising / elite breeding lines	100		3.1 % reduction in potential crop losses due to introduction of trait specific improved varieties of horticultural crops against specific stress conditions	1%
	5. Identification & Release of varieties / hybrids	5.1 No of varieties / hybrids	38			
	6. Standardization of production/protection/ post-harvest handling/ processing/ value addition/ biotechnology process/diagnostic kit or process, technologies	6.1 No of production/ protection/post-harvest handling/processing/value addition/ biotechnology process/diagnostic kit or process, technologies	85			

FINANCIAL OUTLAY (Rs in Cr)	OUTPUTS 2019-20			OUTCOMES 2019-20			
	2019-20	Output	Indicators	Targets 2019-20	Outcome	Indicators	Targets 2019-20
	7. Training and capacity building of stakeholders and field demonstration on technologies.	7.1 No. of Training and capacity building programmes	155				
	8. Enhanced production of breeder / truthfully labelled seeds (vegetable &spices) (tonnes)	8.1 Quantity of breeder/ truthfully labelled (in tonnes)	2.26				
	9. Enhanced production of breeder seed of tuber crops (tonnes)	9.1 Quantity of breeder/labelled (in tonnes)	2250				
	10. Enhanced production of rooted cuttings (nos.)	10.1 Number of root cuttings (in lakh)	5				
	11. Enhanced production of quality plant materials	11.1 Number of plant material (in lakh)	12.5				

5. National Agricultural Science Fund (CS)

FINANCIAL OUTLAY (Rs in Cr)	OUTPUTS 2019-20			OUTCOMES 2019-20		
	2019-20	Output	Indicators	Targets 2019-20	Outcome	Indicators
54.60	1. Publication	1.1 No of Publication	45	1. Better research facilities to have increase in high rated publications, patents	1.1 % of high impact publication from the total no of publication	100%
	2. Patents	2.1 No of Patents	3			
	3. Technologies	3.1 No of Technologies developed	4			

FINANCIAL OUTLAY (Rs in Cr)	OUTPUTS 2019-20			OUTCOMES 2019-20		
					and technologies	

6. Animal Science (CS)

FINANCIAL OUTLAY (Rs in Cr)	OUTPUTS 2019-20			OUTCOMES 2019-20		
	2019-20	Output	Indicators	Targets 2019-20	Outcome	Indicators
310.98	1. Evaluation, and characterization of genetic resources	1.1 Number of genetic resources	10	1. Total increase in productivity of livestock sector in the project areas	1.1 % age rise in productivity of livestock	1%
	2. Part/complete characterization / expression profiling of gene	2.1 Number of genes	30			
	3. In situ / ex situ conservation of important breeds	3.1 Number of semen doses	55000			
	4. Livestock and poultry improvement	4.1 Number of breeds	4			
	5. Production of frozen semen doses from quality bulls (cattle & buffaloes)	5.1 Number of doses	396000			
	6. Production of piglets (8-12 weeks of age)	6.1 Number of piglets	4400			
	7. Production of day old as well as 6 weeks old chicks and hatching eggs	7.1 Number of day old and 6 weeks old chicks hatched (in lakh)	18			
	8. Identification of genetic markers and development of diagnostic kits for livestock and poultry disease diagnosis, adulterants and environmental	8.1 Number of genetic markers including diagnostic kits	10			

FINANCIAL OUTLAY (Rs in Cr)	OUTPUTS 2019-20			OUTCOMES 2019-20			
	2019-20	Output	Indicators	Targets 2019-20	Outcome	Indicators	Targets 2019-20
		pollutants					
		9. Development of resource based region specific feeding modules including feed additives for Improving productivity	9.1 Number of feeding modules including feed additives	20			
		10. Standardization of AI protocol and conducting its field validation (cattle, buffaloes, pigs, yak, sheep, mithun and equine)	10.1 Number of AIs including doses cryopreserved	12000			
		11. New and improvised methods including Identification mechanism for enhancing reproductive efficiency	11.1 Number of New and improvised methods including Identification mechanism	15			
		12. Production of animal products and processes (milk, meat, wool)	12.1 Number of products and processes developed	30			

7. Fisheries Science (CS)

FINANCIAL OUTLAY (Rs in Cr)	OUTPUTS 2019-20			OUTCOMES 2019-20			
	2019-20	Output	Indicators	Targets 2019-20	Outcome	Indicators	Targets 2019-20
142.39		1. Explorations/ Surveys for fisheries resource assessment	1.1 No. of exploration surveys conducted	100	1. Increase in Inland and Marine fish productions and productivity	1.1 Percentage Increase in Inland and Marine fish production (%)	5

	2. Developing Mariculture technology of commercially cultivable marine finfish species	2.1 No. of mariculture technologies developed	1		1.2 Production from project reservoirs (kg/ha/yr)	190
	3. Demonstration of open sea cage farming practices	3.1 No. of demonstrations	5		1.3 Production from project wetlands (kg/ha/yr)	650
	4. Development of breeding protocol of ornamental fish species	4.1 No. of breeding protocol developed	1	2. Improved aquaculture technology commercialization	2.1 Aquaculture technologies developed and transferred for commercialization	2
	5. Development of brood-stock and seed production technologies for finfish/ shellfish species	5.1 No. of broodstock and seed production technologies developed	3	3. Enhanced products marketed based on developed technologies	3.1 No. of products Transferred based on technologies	3
	6. Developing fish health management protocols	6.1 No. of management protocols developed	3			
	7. Development of efficient and cost-effective indigenous feed formulation	7.1 No. of feed formulations developed	2			
	8. Demonstration of cage & pen culture protocols for inland open waters	8.1 No. of demonstration	5			
	9. Development of fishing gear designs for diversified and responsible fishing	9.1 No. of gear designs developed	1			
	10. Development of value added and ready to eat products	10.1 No. of products developed	3			
	11. Genetic characterization of fish species	11.1 No. of genetic characterizations done	40			
	12. Institutionalizing PG/ Doctoral programmes degree	12.1 No. of degree awarded	80			
	13. Training and skill upgradation programmes	13.1 No. of persons trained	4500			

8. National Agricultural Higher Education Project (EAP) (CS)

FINANCIAL OUTLAY (Rs in Cr)	OUTPUTS 2019-20			OUTCOMES 2019-20		
	2019-20	Output	Indicators	Target 2019-20	Outcome	Indicators
223.68	1. Increase in education facilities and courses	1.1 New facilitative units established to enable academic and research infrastructure	5	1. Improvement in student and faculty	1.1 % of Increased AU on time graduation rate	2
		1.2 New pilot courses added / upgraded	5		1.2 % of Increased cut-off scores for students in ICAR entrance tests	2
		1.3 % Increment in internal revenue generation	12		1.3 % Increase in student placement rates	2
		1.4 Increase in Faculty and student exchange programmes (No.)	10		1.4 Number of Students and faculties directly benefitted	54000 (Cumulative)
		1.5 Master and Ph. D students Sandwich Programme undertaken (NO.)	3		2. Increased faculty research effectiveness	2.1 % increase in h-index
	2. Promotion of research and technology transfer initiatives	2.1 % Increase in MoUs signed with industry	2	3. Reduced student and faculty inbreeding	3.1 % AU students admitted from other states	4
		2.2 Increase in technologies transferred (No.)	10		3.2 % faculties with Higher Education degrees from more than one university and more	4

FINANCIAL OUTLAY (Rs in Cr)	OUTPUTS 2019-20			OUTCOMES 2019-20		
	Output	Indicators	Target 2019-20	Outcome	Indicators	Target 2019-20
2019-20					than one state	
		2.3 % Increase in Number of national/ international competitive grants	10	4. Increased AU student and faculty satisfaction with the quality assurance role of the Education Division/ ICAR	4.1 % increase in the AU student satisfaction index	3
	2.4 % Increase in e-governance initiatives undertaken	4	4.2 % increase in the faculty satisfaction index		4	
	3. Increase in seminars, workshops to facilitate knowledge upgradation	3.1 National and international trainings undertaken for faculty upgradation	30	5. Improvement in quality institution	5.1 Increased number of industry-sponsored projects and positions in cutting edge areas	10
		3.2 Industry seminars and professional workshops conducted	8		5.2 % Increase in Performance-based allocation of ICAR Development Grant	2
		3.3 IDP/CAAST /IG proposals assisted by education division	5		5.3 Increased number of Accredited agricultural universities with revised norms and standards	67 (Cumulative)
		3.4 Next-generation MIS / FMS system introduced	2		5.4 % Increase in AUs that have attained academic autonomy	37 (cumulative)
		3.5 External advisory panel visits to AUs for capacity building	10			
		3.6 Workshops / seminars conducted with representatives of State governments	15			

9. Crop Science (CS)

FINANCIAL OUTLAY (Rs in Cr)	OUTPUTS 2019-20			OUTCOMES 2019-20		
	2019-20	Output	Indicators	Targets 2019-20	Outcome	Indicators
701.53	1. Germplasm & Breeding lines evaluated	1.1 Total number of germplasm & Breeding lines evaluated	33000	1. Expected improvement in potential productivity of crops	1.1 % Increase in yield potential	2%
	2. Germplasm conserved for long-term storage	2.1 Total number of germplasm conserved for long-term storage	5000			
	3. Conservation of microbial genetic resources	3.1 Total number of microbial genetic resources conserved	250			
	4. Genotypes identified and registered for unique traits	4.1 Total number of genotypes identified and registered for unique traits	50			
	5. Genes cloned and characterized	5.1 Total number of genes cloned and characterized	12			
	6. Entries tested in AICRP multi-location trials	6.1 Total number of entries tested in AICRP multi-location trials	2500			
	7. Varieties identified by AICRP Varietal Identification Committees	7.1 Total number of varieties identified by AICRP Varietal Identification Committees for release	62	2. Enhanced adoption of farming techniques under crop sciences	2.1 Number of farmers adopting to Technologies demonstrated to them under crop science scheme	10000
	8. Breeder seed produced	8.1 Total quantity of breeder seed produced	60000			
	9. New technologies developed and tested	9.1 Total number of New technologies developed and tested	50			
	10. Front line demonstration conducted	10.1 Total number of Front line demonstration conducted	10000			
	11. Farmers trainings organized	11.1 Total number of farmers trainings organized	250			

FINANCIAL OUTLAY (Rs in Cr)	OUTPUTS 2019-20			OUTCOMES 2019-20		
2019-20	Output	Indicators	Targets 2019-20	Outcome	Indicators	Targets 2019-20
	12. Human Resource Development	12.1 Total number of Masters and Doctoral Degrees awarded	175			

10. Agricultural Universities and Institutions (CS)

FINANCIAL OUTLAY (Rs in Cr)	OUTPUTS 2019-20			OUTCOMES 2019-20		
2019-20	Output	Indicators	Targets 2019-20	Outcome	Indicators	Targets 2019-20
565.51	1. Creation of Student amenities and faculty amenities	1.1 Total number of institute where such facilities have been created	62	1. Increase in enrolment of students	1.1. Percentage increase in enrolment of students	10
	2. Developing \Niche area of excellence modules for knowledge generation and capacity building	2.1 Total number of modules developed	16 new& on-going	2. Increase in quality of agriculture scientist & researchers	2.1. Training of professionals: Networking workshops	7
	3. Development of modules for student READY experimental learning and RAWE/in-plant, internship for UG Students	3.1 Total number of students targeted for internships	15000 students		2.2 Policy Workshops	5

4. National Talent Scholarship for UG Students	4.1 Total number of scholarships awarded	4000	2.3 Institute Policy Publications and major areas of Policy inputs to the Govt.	2
5. National talent scholarship for PG students	5.1 Number of talent scholarship awarded to PG students	3500	2.4 Number of statistical method/ tool/techniques developed/updated	2

FINANCIAL OUTLAY (Rs in Cr)	OUTPUTS 2019-20			OUTCOMES 2019-20		
	2019-20	Output	Indicators	Targets 2019-20	Outcome	Indicators
					2.5 Number of copyrights filed/granted.	8
	6. Digitization of libraries	6.1 Number of libraries digitized	10	3. Policy Research in Agri-cultural Development; Markets; Technology and Sustainable Development Networking and Capacity building Policy Publications and inputs to the Government	3.1 Total number of publications in high impact factor journals	32
	7. Development of online systems in universities	7.1 Number of universities with online systems	15		3.2 % of high impact factor publications from total number of publications	5%
	8. Establishment of New Agricultural Universities	8.1 Number of new agricultural universities established	01			
	9. In house and collaborative research studies on agricultural policy	9.1 Number of in house and collaborative research studies conducted	18			
	10. Development of statistical methods for improving quality of agricultural research	10.1 Total number of new statistical methods developed	09			