

Vote:125 National Animal Genetic Res. Centre and Data Bank

VI: Vote Overview

(i) Snapshot of Medium Term Budget Allocations

Table V1.1: Overview of Vote Expenditures

Billion Uganda Shillings	FY2016/17 Outturn	FY2017/18		FY2018/19 Proposed Budget	MTEF Budget Projections			
		Approved Budget	Spent by End Sep		2019/20	2020/21	2021/22	2022/23
Recurrent Wage	1.908	1.900	0.474	1.900	2.090	2.195	2.304	2.419
Non Wage	2.152	1.795	0.292	1.795	2.189	2.518	3.021	3.626
Devt. GoU	7.999	7.464	0.248	7.464	9.106	10.928	10.928	10.928
Ext. Fin.	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
GoU Total	12.059	11.159	1.014	11.159	13.386	15.640	16.253	16.973
Total GoU+Ext Fin (MTEF)	12.059	11.159	1.014	11.159	13.386	15.640	16.253	16.973
<i>A.I.A Total</i>	0.913	3.420	0.556	3.400	4.000	5.000	6.000	7.000
Grand Total	12.972	14.579	1.570	14.559	17.386	20.640	22.253	23.973

(ii) Vote Strategic Objective

- 1) Establish breeding structures in the country.
- 2) Establish, develop and maintain well managed Centre farms.
- 3) Recruit and retain competent and trained personnel.
- 4) Establish sound financial systems to provide sustainability and public accountability
- 5) Marketing to achieve 30% sales growth per year for non tax revenue.
- 6) Establish evaluation measurements and for M&E.

V2: Past Vote Performance and Medium Term Plans

Performance for Previous Year FY 2016/17

The cross bred animals produced stood at nine hundred seventy-five (975) from dairy and beef cattle which represents 75% level of achievement compared to was planned for, at Ruhenyere, Kasolwe, Lusenke, Aswa and Maruzi. The produced animals are reared for future extension of improved quality genetics to different Ugandan dairy farmers of different Agro ecological zones.

A total of one hundred and fifty (150) calves from pure dairy herds were produced as planned.

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A total of one thousand one hundred fifty-eight (1158) pure beef breeds and appropriate crosses were produced which was more than the one thousand (1000) that was planned for. This was because of the restocking from project 1325 that boosted the production.

A total of five hundred (500) calves from the elite local herd were produced which was one hundred (100) less than what was planned for.

A total of one hundred seventy-five thousand three hundred fourteen (175,314) kuroiler chicks were produced which was much more than the fifty thousand (50,000) that was planned for. Over 5000 households in 90 Districts of Uganda have been reached in the medium term, increasing the total number of Kuroiler birds from 2million to 2, 175,314. Kuroiler birds produced and distributed.

A total of six hundred thirty-nine (639) goat kids were produced which was less than the one thousand (1000) that was planned for because of the inadequate housing facilities which led to deaths and miscarriages of the kids.

A total of two hundred and four (204) piglets were produced which was less than the four hundred fifty (450) that were planned for, this contributed to the genetics pool extended to farmers in the last five years from 1000 pigs to 1204 extended to 500 households from 80 different Districts of Uganda.

A total of twenty-three thousand five hundred forty-two (23,542) doses of semen were produced at NAGRC & DB Entebbe which was less than the eighty thousand (80,000) doses that were planned for. This was because of the old manual semen packing and processing machine which hinders the production, processing, packing and storage of semen.

A total of four hundred (400) tons of corn were produced which was twenty (20) less than the planned amount.

Three hundred twenty (320) tons of silage and fifteen (15) tons of concentrates were produced which was more than the three hundred (300) tons of quality feeds that was planned for.

One hundred (100) artificial insemination technicians were trained which was half the number that was planned for. This has increased the breeding work force in the country from 1200 technicians to 1300 trained AI technicians in Uganda.

Thirty thousand eight hundred forty-six point five (30,846.5) liquid nitrogen litres were produced which was less than the eighty thousand (80,000) that was planned for.

Two thousand two hundred (2,200) farmers were sensitized in ARTs which was a high number as compared with the one thousand six hundred (1,600) farmers that were planned for.

A total of six thousand (6,000) forage trees were planted for environmental protection to meet budget crosscutting issues which was one thousand (1,000) more than what was planned for

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due to the extra support from project 1325 which improved performance.

Six hundred fifty (650) acres were established for pasture and forages which was more than the four hundred (400) that was planned for, the science has been extended to 2200 farmer from 20 Districts of Uganda 20% were the youth mobilised to engage themselves in pasture development as a business for employment creation.

Twenty (20) kilometres of farm roads were opened at Ruhengyere this was aimed at increasing access to the farms and ranches and controlled bush fires.

Six (6) water structures were improved compared to five which was planned for.

Two (2) laboratories were equipped as planned (Semen processing laboratory with an automated semen packing machine and embryo transfer laboratory with molecular genotyping machine).

One bull stud at Entebbe was refurbished and restocked with 13 breeding dairy animals for semen production in order to extend improved genetics to all dairy farmers in the country.

One tractor and implements was procured this has helped to establish one square mile of various forages at Lusenke stock farm in Kayunga and Ruhengyer stock farm IN Kiruhura District.

Two hay balers were acquired and extended to the NAGRC centre farms and ranches of the bull stud at Entebbe and Ruhengyere ranch at Kiruhura district.

Ten motorcycles were acquired and distributed to all farms in different districts,of Kiruhura,Aswa in Pader,Kasowe in Kamuli,Lusenke in Kayunga Njeru in buikwe ,Maruzi in Apac and Rubona in Kabarole district.

One liquid Nitrogen cryo mounted truck was acquired for distribution of liquid nitrogen to all breeding centers in the country.

Performance as of BFP FY 2017/18 (Performance as of BFP)

The total number of day old chicks produced /hatched and extended to the households in Uganda stood at one hundred twenty nine thousand eight hundred eighty (129,880) Day Old. This represents 52% level of performance in relation the quarterly set target, the birds were extended to 136 households, of which 108 were women representing 45% and took 52% of the birds, men were 128 representing 54% and took 48% of the birds The birds were distributed in the thirty three Districts of Kampala, Mpigi, Butambala, Iganga, Jinja, Mbale, Kalangala, Kyenjojo, Kyegegwa, mukono, Luwero, Soroti, Rwengo, kabale, Bwikwe, Jinja, Iganga, Gulu, etc

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The total number of improved piglets produced during the quarter stood at sixty piglets (60), the pig farmers trained in best piggery practices e.g during the shows/ exhibitions stood at two hundred seventy five (275) and 60% were female compared to 40% male.

The number of artificial Insemination technicians trained from 26 districts stood at twenty (28) representing 56% level of performance of the quarterly planed total, this has contributed the national breeder workforce to improve the national herd.

The number of students trained on one day visit basis from ten Districts stood at six hundred and twenty two (622) this represents 124% level of performance improving the level of awareness in genetic improvement in the country, four hundred twenty two were female and two hundred were Male.

The number of dosed of semen for dairy and beef cattle produced and ready for dispatch to farmers stood at fourteen thousand six hundred and eight (14,608). This represents 77% level of performance which contributed to the improved cryo preserved genetic pool of the country.

The number of litres of liquid Nitrogen produced and supplied to different breeding centres stood at six thousand nine hundred thirty eight (6938). This represents 64% level of performance which has helped to sustain the genetic pool banks and Artificial insemination field services in the different parts of the country.

The total number of pure dairy animals produced during the quarter stood at Forty one (41) animals, compared to the fifty (50) animals planed for which represents 82% level of performance.

The number of dairy cross bred animals produced during the quarter stood at One hundred five (105) animals, compared to the one hundred seventy five (175) animals planed for which represents 60% level of performance.

The number of pure beef animals produced during the quarter stood at two hundred twenty four (224) compared to the two hundred fifty (250) animals planned for, this represents 89% level of performance.

The animals are being reared for future production and Productivity to supply improved breeding stock to farmers in different Agro ecological zones of Uganda that is Kiruhura, Mbarara, Kabarole, Apach, Bulamburi, Wakiso, Kayunga, Kamuli and Bwikwe .

The number of acres of maize established stood at fifty (50) acres of maize established, 200 tons of silage harvested, 300 kg of Sudan grass seed harvested, 100 kgs of mucuna seed harvested . These efforts were geared towards increasing

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Production and Productivity of farmers in the country, this technology was extended to

The number Kilogrammes of animal feeds formulated stood at 25,000Kgs representing 535.8% of the quarterly set target.

The number of Kgs of maize silage produced stood at two hundred thousand (200,000) kgs representing 93.5% of the quarterly set target. This technology has been extended to five hundred farmers from Buvuma, Nakaseke of these farmers three were elderly, two hundred were youth and women were 150, men were three hundred and fifty.

The number of Kid produced during quarter one from centre farms of NAGRC and DB stood at one hundred and seventy four (174) representing 70% of the quarterly set target.

FY 2018/19 Planned Outputs

The total number of Kuroiler chicks to be produced and extended to farmers all over Uganda is projected to be one million five hundred thousand chicks (1,500,000). The youth, disabled, women, and the elderly are highly targeted for employment and wealth creation for all Ugandan poultry farmers.

The total number of kilometers of perimeter fence to be constructed is projected at thirty (30) Kilometers (30) at different NAGRC&DB ranches. One excavator shall be procured to strengthen mechanization to encourage the female employees working on farms and ranches. One livestock Automated recording system shall be established for the 12 center farms and ranches located in the nine districts, Bio security of the National bull stud shall be strengthened through improved bio security for world accreditation.

Refreshment of all the country's breeding work force of one thousand two. Hundred technicians (1200). Fifteen (15) motorcycles shall be procured for Artificial insemination service delivery. Twenty kilometers of farm roads opened at NAGRC&DB center farms and ranches.

Two service delivery vehicle shall be procured for farms and ranches.

The total number of tones of pasture seed and vegetative planting materials to be produced and availed to farmers for pasture improvement is projected to stand at one hundred twenty five tones (125). These planting materials shall be extended to livestock farmers to improve their pastures for improved livestock nutrition in the pasture stricken areas of Uganda.

The total number of improved piglets to be produced is projected to stand at six hundred and forty two (642). The youth and women are targeted for these small but

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income generating projects all over the country.

The total number of dairy animals to be produced on NAGRC farms and ranches is projected at six hundred fifty two (652) contributing to the improved national dairy herd for increased production and Productivity for Livestock farmers in all parts of the country targeting, the youth, men, women and the elderly.

The total number of beef animals to be produced on NAGRC farms and ranches is projected at two thousand seven hundred thirty nine (2739).

The total number of improved goat kids is projected at one thousand five hundred ninety nine (1,599) contributing to the pool of improved national flock. These goats shall be reared and extended to all Ugandan goat farmers to improve their flocks for increased production, productivity.

The total number of forage trees established are projected to stand at five thousand (5000), this is aimed at protecting the environment while producing and preserving of the different livestock speeches.

The total number of doses of semen for both dairy and beef to be produced and extended to farmers to improve their herds is projected to be one hundred and eight thousand (108,000).

The total number of litres of liquid nitrogen to be produced to sustain the Artificial insemination services in the country is projected to stand at one hundred twenty thousand (120,000) litres. This will be distributed to the different AI sub-canter, in the country for increased access to Artificial insemination services.

The total number of Artificial Insemination technicians to be trained and refreshed is projected to stand at one thousand three hundred (1300) improving and contributing to existing breeding work force in the country for improved service delivery.

The number of farms and ranches to be titled is projected at four (4), this will reduce the incidences of land grabbing and insecurity on farms.

Medium Term Plans

Mechanization: In the medium term the vote plans to mechanise and equip all the centre farms and ranches located in the nine districts of Kiruhura, Bwike, Kamuli, Bulambuli, Pader, Apac, Wakiso, Kayunga and Kabarole, with necessary machinery and equipment in order to improve performance of different livestock speeches.

Infrastructural improvements: in the medium term, the vote intends to improve the infrastructure in order to create a good breeding environment in order to extent the

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viable genetic materials to all livestock farmers in different parts of the country such infrastructures include administration blocks, laboratories, paddocks and fences, farm roads valley tanks and water reticulation. This will encourage the youth, women and disabled to be employed on centre farms and ranches located in the nine districts of Kiruhura, Bwike, Kamuli, Bulambuli, Pader, Apac, Wakiso, Kayunga and Kabarole.

Development of meaningful partnerships and collaborative linkages; in the medium term the vote intends to develop partnerships which will improve efficiency in service delivery.

Pasture establishment: The vote intends to intensify pasture establishment and validation on all farms and ranches and extend the same science and technology to all livestock farmers in Uganda for increased production and productivity.

Strengthening the Assisted reproductive techniques work force: The vote intends to train and refresh all the breeding technicians to extend breeding services through Artificial insemination in the country in order for the farmers to access superior genetics at a lower cost.

Massive genetic improvement; the vote intends to undertake a massive community breeding programme in order to counter the high demand for genetically improved animals for wealth creation. This will be done through massive synchronization of animals for the different livestock farming community in Uganda.

Rural poultry development; the vote intends to expand the rural poultry development programme targeting, the youth, widows, rural women and the disabled in the central region, Eastern, Northern in order to improve their incomes through improved poultry genetics.

Piggery improvement programme; the vote intends to expand the improved pig genetics to target three thousand (3000) youth, women and elderly in Iira, Hoima and Kamuli districts for small scale Agribusiness projects for income generation and wealth creation.

Goat improvement programme; the vote intends to conserve and improve the goat genetics in order to target the HIV/IDS positive living community through consumption of goat milk for improved health.

Restocking; the vote intends to rehabilitate and restock all the NAGRC&DB Centre farms and ranches located in the different Agro ecological zones of Uganda Western, south western, central region, Eastern and Northern region in order to produce at optimum.

The institution intends to develop bankable project proposals to attract more funding

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to the institution in order to undertake the minimum investment requirements in NAGRC&DB to improve service delivery.

Efficiency of Vote Budget Allocations

The vote has efficiently allocated funds to the output cost centers in relation to the sector and farmers demands to achieve efficiency in performance to realize its mandate of breeding and genetic development;

Dairy breeding:. UGX 400million.

Beef breeding:. UGX 2.25 billion.

Goat breeding and conservation,. UGX 300Million.

PIGS breeding -. 400 million.

Pasture production and Improvement, **UGX 769 million**

Revitalizing the Artificial Insemination services, **UGX 1 billion.**

Breeding and multiplication of viable poultry genetics;–UGX 2.26 billion.

Creation of enabling environment for breeding through establishment of livestock handling structures; UGX 1.9 billion.

Conservation and utilization of indigenous animal genetic resources UGX 500million.

Capacity building UGx 150 million

Vote Investment Plans

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- 1) Purchase two service delivery vehicles for center farms and ranches.
- 2) Purchase of one excavator with a service delivery vehicle.
- 3) Purchase of a livestock automated system for 12 center farms and ranches.
- 4) Purchase of 15 motorcycles for Ai technicians.
- 5) Opening up of 30 km of farm roads .
- 6) Purchase of two batches of assorted genetic materials for massive breeding of beef animals.
- 7) Establishment of two spray races at Bulago stock farm Bulambuli district and Rubona Stock farm Kabarole District.
- 8) Establishment of three administrative structure on farms and ranches.
- 10) Establishment of two hay burns at Aswa ranch Pader district.
 - 11) Establishment of one Pig sty at Njeru stock farm Bwikwe district.
 - 12) Establishment of two square miles of forages at all center farms and ranches.
 - 13) Purchase of fencing materials.
 - 14) Establishment of the bio security at the National bullstud at Entebbe.

Major Expenditure Allocations in the Vote for FY 2018/19

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DAIRY Breeding: The vote will intensify dairy breeding on and off NAGRC&DB center farms and ranches to meet the farmer's demands through pure and appropriate cross breeding. UGX 400million.

BEEF breeding: The vote will intensify beef breeding through pure and appropriate crossing with the local animals on and off NAGRC&DB center farms and ranches to meet the farmer and export demands. UGX 2.25 billion.

Goat breeding and conservation, the vote will intensify breeding and multiplication of improved goat genetics on and off NAGRC&DB center farms and ranches to meet the farmer's demands. UGX 300 Million.

PIGS breeding -The vote will intensify multiplication of improved pig genetics in order to improve the farmer's flocks in the country to achieve improved production and productivity. 400 million.

Pasture production and Improvement, the vote will intensify pasture production and improvement for improved livestock performance to meet the sector goal of improved production and productivity of livestock for export. **UGX 769 million**

Revitalizing the Artificial Insemination services, the vote will improved Animal genetics to meet the sector Objective of improved Production and productivity through training, refreshing and equipping of the breeding work force of 1300 technicians. **UGX 1 billion.**

Breeding and multiplication of viable poultry genetics; The vote will Intensify the Multiplication of the improved poultry genetics in the country to meet the sector goal of increased production and productivity and have food security –UGX 2.26 billion.

Creation of enabling environment; the vote will embark on rehabilitation of the NAGRC&DB center farms and ranches; to create an enabling environment for Livestock genetics improvement through establishment of livestock handling structures UGX 1.9 billion.
Mechanization of farms and ranches for improved production and productivity through pasture establishment UGX 600Million.

Conservation and utilization of indigenous animal genetic resources, the vote intends to conserve and utilize the indigenous animal genetic resources, though, selection, evaluation, and equipment of farms and ranches. UGX 500million.

V3: PROGRAMME OUTCOMES, OUTCOME INDICATORS AND PROPOSED BUDGET ALLOCATION

Table V3.1: Programme Outcome and Outcome Indicators

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Vote Controller :							
Programme : 56 Breeding and Genetic Development							
Programme Objective : Production, Reproduction and Improved access to improved animal genetics.							
Responsible Officer: Dr .CHARLES LAGU EXECUTIVE DIRECTOR							
Programme Outcome: Increased availability and access to improved genetics.							
<i>Sector Outcomes contributed to by the Programme Outcome</i>							
1. Increased production and productivity of priority and strategic commodities							
Programme Performance Indicators (Output)	Performance Targets						
	2016/17 Actual	2017/18 Target	Base year	Baseline	2018/19 Target	2019/20 Target	2020/21 Target
• Percentage change in the utilization of improved germplasm.	0				10%	15%	20%

Table V3.2: Past Expenditure Outturns and Medium Term Projections by Programme

<i>Billion Uganda shillings</i>	2016/17	2017/18		2018-19	MTEF Budget Projections			
	Outturn	Approved Budget	Spent By End Q1	Proposed Budget	2019-20	2020-21	2021-22	2022-23
Vote :125 National Animal Genetic Res. Centre and Data Bank								
56 Breeding and Genetic Development	11.385	11.159	0.998	11.159	13.386	15.640	16.253	16.973
Total for the Vote	11.385	11.159	0.998	11.159	13.386	15.640	16.253	16.973

V4: SUBPROGRAMME PAST EXPENDITURE OUTTURNS AND PROPOSED BUDGET ALLOCATIONS

Table V4.1: Past Expenditure Outturns and Medium Term Projections by SubProgramme

<i>Billion Uganda shillings</i>	2016/17	FY 2017/18		2018-19	Medium Term Projections			
	Outturn	Approved Budget	Spent By End Sep	Proposed Budget	2019-20	2020-21	2021-22	2022-23
Programme: 56 Breeding and Genetic Development								
01 Headquarters-NAGRC&DB	2.543	2.619	0.556	2.619	1.639	1.510	1.689	1.789
02 Dairy cattle	0.246	0.124	0.031	0.124	0.247	0.592	0.736	0.809
03 Beef cattle	0.258	0.119	0.021	0.119	0.238	0.238	0.500	0.620
04 Poultry	0.060	0.060	0.010	0.060	0.120	0.238	0.400	0.598
05 Small ruminants & non ruminants	0.133	0.120	0.028	0.120	0.240	0.240	0.420	0.500
06 Pasture and feeds	0.300	0.225	0.047	0.225	0.841	0.841	0.641	0.541
08 National Animal Data Bank	0.021	0.025	0.006	0.025	0.050	0.050	0.125	0.200
09 Fish breeding and production	0.015	0.034	0.004	0.034	0.068	0.068	0.134	0.300
10 Assisted Reproductive Technologies (ARTs)	0.315	0.369	0.047	0.369	0.837	0.936	0.680	0.688
1325 NAGRC Strategic Intervention for Animal Genetics Improvement Project	7.999	7.464	0.248	7.464	9.106	10.928	10.928	10.928
Total For the Programme : 56	11.889	11.159	0.998	11.159	13.386	15.640	16.253	16.973
Total for the Vote :125	11.889	11.159	0.998	11.159	13.386	15.640	16.253	16.973

N / A

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Table V4.3: Major Capital Investment (Capital Purchases outputs over 0.5Billion)

FY 2017/18		FY 2018/19	
Appr. Budget and Planned Outputs	Expenditures and Achievements by end Sep	Proposed Budget and Planned Outputs	
Vote 125 National Animal Genetic Res. Centre and Data Bank			
Programme : 56 Breeding and Genetic Development			
Project : 1325 NAGRC Strategic Intervention for Animal Genetics Improvement Project			
Output: 72 Government Buildings and Administrative Infrastructure			
Improved administrative Infrastructure on farms and ranch.	The designs and bills of quantities are yet to be produced. 2) Water reticulation designs for Lusenke and Nshaara are in the final stage of being finalised.	Creation of enabling environment for breeding through establishment of administrative and livestock handling structures.	
Improved administrative infrastructure on farms and ranches.			
Total Output Cost(Ushs Thousand):	3.400	0.043	2.100
Gou Dev't:	3.400	0.043	2.100
Ext Fin:	0.000	0.000	0.000
A.I.A:	0.000	0.000	0.000
Output: 77 Purchase of Specialised Machinery & Equipment			
Improved mechanization of farms and ranches.	The bidding process for supply of the bulldozer is ongoing.	Improved mechanization of farms and ranches for improved production and productivity of animals through pasture establishment.	
Total Output Cost(Ushs Thousand):	1.900	0.000	0.600
Gou Dev't:	1.900	0.000	0.600
Ext Fin:	0.000	0.000	0.000
A.I.A:	0.000	0.000	0.000
Output: 79 Acquisition of Other Capital Assets			
Improved stocks on farms and ranches leading to improved Production.	N/A	Acquisition of genetic and non-genetic materials for massive breeding on and off NAGRC&DB farms and ranches.	
Total Output Cost(Ushs Thousand):	0.600	0.106	2.914
Gou Dev't:	0.600	0.106	2.914
Ext Fin:	0.000	0.000	0.000
A.I.A:	0.000	0.000	0.000

V5: VOTE CHALLENGES FOR 2018/19 AND ADDITIONAL FUNDING REQUESTS

Vote Challenges for FY 2018/19

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Inadequate development funds to handle the dilapidated infrastructure (Perimeter fencing, animal handling structure, water reticulation, accommodation on farms and ranches). This has hindered gender and equity in recruitment since the environment doesn't support equity.

Inadequate salaries and wages to motivate scientists, the institutions wage bill is below the required levels to recruit and retain scientists who can deliver the institutions mandate of breeding and genetic development.

Inadequate funding, a factor which has affected optimization of the institution's potential for breeding and reproduction of quality genetics for all dairy and beef farmers in all parts of the country. The chronic under funding of the institution has hindered proper breeding since breeding is an expensive venture, and it has affected the production and productivity of farm animals since genetic is a key factor.

Land encroachment all over the government center farms and ranches, this is a result of lack of legal and clear ownership by NAGRC&DB where all powers in regard to land are vested in the chairman Uganda land commission and NAGRC is just a user a factor which hinders easy litigation of the encroachers and delayed eviction hence loss land and breeding space.

Prolonged drought, the environmental changes have highly affected the vote performance most especially in the drought stricken areas such as south western Uganda and the northern hindering proper breeding as a result of poor nutrition.

Mechanization of farms and ranches the institution for long has lacked mechanization equipment such as earth moving equipment to deal with thickets, farm roads, valley tanks and dams, tractors for farm transport and production all these factors have hindered equity and gender development.

Disease outbreaks and tick resistance during operations have come with all associated costs which hinder performance and delivery of the institutions mandate. Such diseases include foot and mouth disease (FMD), lumpy skin and east African coast fever (ECF) etc.

Table V5.1: Additional Funding Requests

Additional requirements for funding and outputs in 2018/19	Justification of requirement for additional outputs and funding
Vote : 125 National Animal Genetic Res. Centre and Data Bank	
Programme : 56 Breeding and Genetic Development	
OutPut : 01 Human Resource management & development.	

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Funding requirement US\$ Bn : 4.400	Funds shall be used to operationalize the approved organizational structure through recruitment of relevant staff to implement NAGRC&DB mandate. For the last 15 years the institution staff have been earning very little salaries compared to other science institutions, the proposed improvement in salaries and wages will help to motivate staff and attain the set targets of genetic improvement in the country leading to increased production and productivity in the livestock sub sector.
Output : 23 Breeding & multiplication of pigs	
Funding requirement US\$ Bn : 2.000	Breeding and multiplication of improved pig will contribute to improved production and productivity of the existing pig flocks in the country, contributing to the improvement of farmer's income and address food security and nutrition among the pig farming community.
Output : 27 Evaluation and multiplication of improved pasture and fodder germ-plasm	
Funding requirement US\$ Bn : 2.000	The establishment of seed banks for pasture will contribute to improved livestock nutrition and creation of employment opportunities among the youth who will take pasture establishment as a business.
Output : 37 Training, refreshing and facilitating AI and MOET technicians	
Funding requirement US\$ Bn : 2.500	The training of this workforce will increase access to improved animal genetics for improved production and productivity of livestock farmers in the country. The improvement in the animal genetics will increase the supply of quality animals for export.
Output : 72 Government Buildings and Administrative Infrastructure	
Funding requirement US\$ Bn : 74.660	The livestock handling structures will create an enabling environment for breeding which will increase improved animal genetics in the country. This will lead to improved production and productivity for wealth creation.