

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	FY2017/18 Outturn	FY2018/19		FY2019/20 Proposed Budget	MTEF Budget Projections			
		Approved Budget	Spent by End Sep		2020/21	2021/22	2022/23	2023/24
Recurrent Wage	1.900	1.900	0.472	1.900	1.995	2.095	2.199	2.309
Non Wage	1.629	1.733	0.323	1.733	1.993	2.391	2.870	3.444
Devt. GoU	6.819	7.364	1.532	7.364	8.837	8.837	8.837	8.837
Ext. Fin.	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
GoU Total	10.347	10.997	2.327	10.997	12.825	13.323	13.906	14.590
Total GoU+Ext Fin (MTEF)	10.347	10.997	2.327	10.997	12.825	13.323	13.906	14.590
<i>A.I.A Total</i>	1.321	7.064	0.797	7.064	8.000	9.000	10.000	15.000
Grand Total	11.668	18.061	3.125	18.061	20.825	22.323	23.906	29.590

(ii) Vote Strategic Objective

1. Enhance Animal Genetic Improvement efforts for increased animal Production and Productivity.
2. Conservation of Biodiversity, Sustainable Utilization and Development of Indigenous Animal Genetic resources.
3. Strengthened Institutional capacity, growth and development.
4. Client oriented services, collaborations, and entrepreneurship.
5. Establish a National Animal information resource and development centre.

V2: Past Vote Performance and Medium Term Plans

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Performance for Previous Year FY 2017/18

A total of one thousand two hundred and sixty four (1264) beef animals were produced pure beef breeds and their crosses were produced from NAGRC&DB Centre farms located in Kiruhura, Kamuli, Kabarole, Apac, Pader, Buikwe, Bulambuli and Wakiso districts. These animals are being reared for future extension to farming households in the various Agro-ecological zones of Uganda.

In the same year, 500 elite indigenous cattle were produced in a bid to conserve biodiversity of our indigenous animal genetic resources for utilization by the future generations.

One thousand and seventy five (1,075) animals and two hundred and forty two (242) pure dairy animals were produced from the improved herds of Friesian, Ayrshire, Jersey, Guernsey, Brown swiss, Sahiwal were produced at Ruhengyere, Rubona, Bulago, Livestock Experimental Station and Njeru stock farm which are located in the different agro ecological zones. These animals are being reared for future extension to farmers adding to the improved herd in the country in the different Agro ecological zones. This geared towards supporting the

In order to improve access to improved genetics of chicken for rural development, The total number of improved birds produced, stood at three hundred thousand eight hundred and forty nine (300,849) Kuroiler chicks. The produced chicks were distributed to households in fifty four (54) Districts of Uganda and this has contributed to the increased production and productivity of poultry farmers, it has reduced the lengthy period of producing local cocks and eggs on market from one year to four to five month.

This puts the accumulated total production and distribution of Kuroiler birds to 2, 476,163 birds which have over the years been distributed to more than 15, 000 households, 65% of which are women headed.

The accumulated total number of improved Kids produced stood at one thousand, two hundred and sixty (1260) goat kids were produced and reared at Ruhengyere, Sanga and Nshaara in Kiruhura district; Rubona in Bunyangabu district; Kasolwe in Kamuli district and Njeru in Buikwe district. These are reared for future extension to farmers in all Agro-ecological zones of Uganda to improve their flocks.

A total of four hundred sixty eight (468) piglets were produced, this contributed to the improved genetics pool of pigs extended to farmers in the country in the 39 different Districts of Uganda, increasing the number of good quality piglets produced and extended to farmers to 1, 670. This intervention reached over 1000 households drawn from 90 Districts across Uganda, 45% of which were women compared to the 55% taken by men.

Artificial insemination being the easiest and cheapest means of accessing good quality genetics by the farming households, seventy six thousand and two hundred (76,200) doses of conventional semen from beef and dairy cattle breeds were produced at NAGRC&DB Entebbe. This semen is preserved and availed to farmers in the different agro-ecological zones of Uganda.

Forty one thousand eight hundred and eighty (41,880) liters of liquid nitrogen were produced and distributed in all the agro-ecological zones of Uganda to support Artificial insemination service delivery aimed at improving animal genetic resources.

Two hundred 200 artificial insemination technicians from thirty five Districts of Uganda were trained, four of which being female. This has increased the breeding work force in the country from 1,300 to 1500 AI technicians trained.

In the need to increase access to farms and ranches and control the wild fires, the entity targeted to open and grade in the need to increase access to farms and ranches, twelve (12) kilometers of farm roads were opened, graded and graveling is in progress at Maruzi ranch.

In the interest of improving production and productivity of Government farms and ranches, through mechanization, the entity equipped farms and ranches with one high power tractor and implements and one crawler bull dozer for bush clearing, road works and construction of valley tanks to harvest adequate rain water for production.

Supporting our staff for career advancement and short term skills training and enhancement in local region and international institutions and academic centers, recently one staff was trained in Intellectual Property rights and Indigenous knowledge Technologies.

In order to address challenges associated with poor breed performance due to poor nutrition, NAGRC&DB produced three hundred twenty (320) tons of silage and fifteen (15) tons of concentrates for uptake by the farming households in the country. Over 2500 farmers from 25 districts of Uganda, 60% of which were youth and 45% of them women were able to access the technology.

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Performance as of BFP FY 2018/19 (Performance as of BFP)

1. In the effort to improve food security and wealth creation, the total number of improved birds produce and extended to farmers stood at one hundred twenty five thousand seven hundred forty three (125,743) day old chicks .These were mainly extended to commercial farmers, farmer groups, organizations such as KCCA and Hunger Free World who sell brooded chicks to farmers in the urban areas. 110 men bought 42% of the chicks, 70 women bought 22%, 29% were brooded at LES mainly for NAADS and 7% of the chicks were purchased by KCCA and some taken to the Jinja show. For equity and fairness, majority of chicks were purchased by farmers in the Central region mainly Wakiso and Kampala. The least chicks were taken by farmers in the Northern region in the districts of Arua, Oyum and Gulu.Overall, farmers came from 34 districts across the country.
2. Efforts to improve the National flocks were enhanced through production of two hundred sixty three (263) kids
3. In order to improve food security through pig breeding and production, the total number of improved pigs produced during third quarter stood at 437.
4. In the effort to improve production and Productivity of the National herd, a total of 486 cross bred animals were produced on and off NAGRC&DB farms.
5. The total number of animals synchronized served with high grade semen stood 1741 and the conception rates were 74% through community based breeding.
6. The efforts to improve quality genetics were enhanced with production of 248 calves from pure dairy herd.
7. In order to establish, promote and strengthen breeding in the country, two breeder's societies/ Associations established/ Strengthened.
8. Through conservation program the total number of animals from the elite local herd produced stood at 674.
9. 5766 doses of semen were produced in order to strengthen breed improvement.
10. In order to strengthen the breeding workforce in the country, 67 AI technicians were trained from 13 Districts across Uganda.
11. 5,952 farmers were trained in assisted reproductive techniques in the bid to increase farmers awareness in assisted reproductive technologies. The farmers were from various parts of the country.
12. In the bid to protect and conserve the environment, a total of 186 forage trees were planted for environmental protection to meet budget crosscutting issues.
13. In order to improve livestock performance through Livestock Nutrition, 359 acres of pasture and forages were established at the center farms located in various regions of Uganda.
14. 21 tons of concentrates which were produced In the preservation of animal feed.
15. 12 kilometers of farm roads are yet to be opened and graded at Nshaara ranch for increased access to farms and ranches.
16. One administrative structure, construction for Bulago, stock farm in Bulambuli District is in progress.
17. In order to increase access to safe water for livestock production, two water systems at Njeru stock farm and Aswa Ranch are in the progress of establishment.
18. In order to build capacity and a critical mass of well trained staff, the total number staff trained at masters level stood at 4 staff and 3 trained in Embryo Transfer technology in certificate in South Africa.
19. In order to strengthen the public private partnerships, NAGRC&DB established seven partnerships during the quarter .

FY 2019/20 Planned Outputs

During the financial year 2019/20 vote 125 in fulfillment of the mandate of breeding and genetic development will have the following tangible outputs;

- 1) Breeding and production of 2000 dairy animals on and off NAGRC&DB Centre farms and ranches
- 2) Breeding and Production of 2000 quality pig breeds.
- 3) Breeding and Production of 2500 beef animals .
- 4) Breeding and production of 1,000,000,000 birds.
- 5) Production and distribution of 100,000,000 doses of high quality semen for farmers
- 6) Production and distribution 40,000 liters of liquid nitrogen.
- 7) Provision of specialized training to 5000 farmers and 200 artificial insemination technician
- 8) Establishment of six administrative and livestock handling structures on various center farms and ranches.
- 9) Establishment and conservation of two square miles of pasture and fodder on and off NAGRC&DB farms and ranches.
- 10) Establishment of two fish ponds for fish breeding at Rubona and Lusenke.
- 11) Breeding and production of 2000 improved goat kids.
- 12) Conservation and maintenance of 3000 indigenous animals for maintenance of eastern Africa regional gene bank.
- 13) Establishment of 5000 forage trees for environmental protection and animal feeding.

Medium Term Plans

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Massive genetic improvement through Community and nucleolus breeding scheme;

The vote intends to undertake a massive community breeding programme in order to address the high demand for improved animal genetic resources for wealth creation. This will be done through massive synchronization of animals in different livestock farming communities across all agro-ecological zones of Uganda.

In the medium term, the vote intends to rapidly improve livestock genetics through community breeding which is a negotiated settlement in all cattle rearing communities of Uganda

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 farming households in Uganda for increased production and productivity. The youths and women are highly targeted to take up this venture for employment creation and income generation.

Strengthening the Assisted reproductive techniques work force:

The vote intends to train and re-tool all breeding technicians in the country to extend breeding services to livestock farmers at sub county level. This will enable farmers' access to superior genetics through artificial insemination at a lower cost.

Development of meaningful partnerships and collaborative linkages;

In the medium term the vote intends to develop partnerships which will improve efficiency in service delivery. In these partnerships, the vote targets partners who are both equity and gender responsive.

Rural poultry development;

The vote intends to expand the rural poultry development programme through improved poultry genetics targeting the youth, widows, rural women and the disabled in all agro-ecological zones of Uganda. This is aimed at improving their income, food and nutrition security.

Piggery improvement programme;

The vote intends to expand the improved pig genetics to target three thousand (3000) youth, women and elderly in all agro-ecological zones of Uganda in small scale agribusiness projects for income generation and wealth creation.

Goat improvement programme;

The vote intends to conserve, improve and promote utilization of improved goat genetic resources in the country. This will lead to increased production and productivity of goats among the farming households for income and food security. This intervention is also envisaged to address nutrition and health issues of the HIV/AIDS positive living persons and infants 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 regions of Uganda Western, south western, central region, Eastern and Northern in order to produce at optimum capacity in order to meet the farmers' demands for improved genetic resources.

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

Efficiency of Vote Budget Allocations

The entity allocated resources efficiently in the areas that accelerate increased production and productivity:

- 1) Sub programme one was allocated 2.619 billion this will support salaries and wages, statutory deductions such as gratuity and National Social security contribution.
- 2) Output 72 Government Buildings and Administrative Infrastructure was efficiently allocated UGX 4.614, the resources are meant for Creation of enabling environment for breeding through establishment of administrative and livestock handling structure on. Such infrastructures are in South Western Uganda In Bunyangabu, Eastern Uganda in Kamuli and central Uganda in Wakiso, Buikwe and Kayunga District.
- 3) Output 77 Purchase of Specialized Machinery & Equipment was allocated UGX 600,000,000 for improved mechanization of farms and ranches for improved production and productivity of animals through pasture establishment and harvesting.
- 4) Output 79 Acquisition of Other Capital Assets acquisition of Other Capital Assets was allocated UGX 1,000,000,000 for Acquisition of genetic and non-genetic materials for massive breeding on and off NAGRC&DB farms and ranches, or support community breeding activities.
- 5) Sub programme 02 was allocated UGX 124,000,000 to intensify Dairy cattle breeding on and off centre farms and ranches.
- 6) Sub programme 02 was allocated UGX 119,000,000 to intensify beef cattle breeding on and off the Centre farms and ranches.
- 7) Sub programme 06 was allocated UGX 200,000,000 intensify pasture production and animal nutrition
- 8) Sub programme 10 was allocated UGX 342,000,000 to intensify assisted reproductive techniques for improved animal genetics in the country.
- 9) Sub programme 05 was allocated UGX 110,000,000 to accelerate the breeding of pigs and goats for improved production and productivity.
- 10) In order to reduce inefficiency to service delivery due to mobility the entity allocated UGX 500,000,000 towards output 75 Purchase of Motor Vehicles and Other Transport Equipment

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Vote Investment Plans

Vote 125 made the following major capital investment in the FY 2019/20:

- 1) Government Buildings and Administrative Infrastructure UGX 4,614,000,000
- 2) Purchase of Specialized Machinery & Equipment(Tractors and implements UGX 600,000,000
- 3) Acquisition of Other Capital Assets (Semen and embryos for dairy and beef) UGX 1,000,000,000
- 4) Pasture and animal feeds was allocated UGX 400,000,000
- 5) Purchase of Motor Vehicles and Other Transport Equipment UGX 500,000,000
- 6) Capacity building and training of staff in 10 masters degrees UGX 300,000,000

Major Expenditure Allocations in the Vote for FY 2019/20

Vote 125 made the following major capital investment in the FY 2019/20:

- 1) Establishment of six Government Buildings and Administrative Infrastructure UGX 4,614,000,000
- 2) Purchase of Specialized Machinery & Equipment(Tractors and implements UGX 600,000,000
- 3) Acquisition of Other Capital Assets (Semen and embryos) UGX 1,000,000,000
- 4) Pasture and animal feeds was allocated UGX 400,000,000
- 5) Purchase of Motor Vehicles and Other Transport Equipment UGX 500,000,000

V3: PROGRAMME OUTCOMES, OUTCOME INDICATORS AND PROPOSED BUDGET ALLOCATION

Table V3.1: Programme Outcome and Outcome Indicators

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						
	2017/18 Actual	2018/19 Target	Base year	Baseline	2019/20 Target	2020/21 Target	2021/22 Target
• Percentage change in the utilization of improved germplasm.		10%			15%	25%	30%

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

<i>Billion Uganda shillings</i>	2017/18	2018/19		2019-20	MTEF Budget Projections			
	Outturn	Approved Budget	Spent By End Q1	Proposed Budget	2020-21	2021-22	2022-23	2023-24
Vote :125 National Animal Genetic Res. Centre and Data Bank								
56 Breeding and Genetic Development	9.505	10.997	2.278	10.997	12.825	13.323	13.906	14.590
Total for the Vote	9.505	10.997	2.278	10.997	12.825	13.323	13.906	14.590

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>	2017/18	FY 2018/19	2019-20	Medium Term Projections
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	Outturn	Approved Budget	Spent By End Sep	Proposed Budget	2020-21	2021-22	2022-23	2023-24
Programme: 56 Breeding and Genetic Development								
01 Headquarters-NAGRC&DB	2.569	2.619	0.573	2.619	2.988	3.088	3.199	3.309
02 Dairy cattle	0.102	0.124	0.031	0.124	0.124	0.324	0.424	0.424
03 Beef cattle	0.096	0.119	0.020	0.119	0.119	0.317	0.517	0.517
04 Poultry	0.060	0.060	0.008	0.060	0.097	0.097	0.097	0.205
05 Small ruminants & non ruminants	0.060	0.110	0.027	0.110	0.060	0.060	0.060	0.060
06 Pasture and feeds	0.185	0.200	0.032	0.200	0.200	0.200	0.200	0.300
08 National Animal Data Bank	0.023	0.025	0.004	0.025	0.025	0.025	0.025	0.025
09 Fish breeding and production	0.034	0.034	0.004	0.034	0.034	0.034	0.034	0.200
10 Assisted Reproductive Technologies (ARTs)	0.228	0.342	0.065	0.342	0.342	0.342	0.513	0.713
1325 NAGRC Strategic Intervention for Animal Genetics Improvement Project	6.569	7.364	1.514	7.364	8.837	8.837	8.837	8.837
Total For the Programme : 56	9.925	10.997	2.278	10.997	12.825	13.323	13.906	14.590
Total for the Vote :125	9.925	10.997	2.278	10.997	12.825	13.323	13.906	14.590

N / A

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

FY 2018/19		FY 2019/20
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		
Creation of enabling environment for breeding through establishment of administrative and livestock handling structures.	<ol style="list-style-type: none"> 1) The Architectural Designs for the regional Gene bank is in place. 2) Feasibility study/situation analysis was under taken for proper planning and strategic direction of the Entity. 3) Construction of three valley tanks at Aswa Ranch is at design level and real works shall commence in quarter two. 4) The Purchase of fencing materials and fencing twenty (20) Kilometers is at delivery level. 5) The establishment of three (03) pig stys at LES, Kasorwe and Njeru stock farm is at site handover level. 	<ol style="list-style-type: none"> 1) Establishment of six structure for both management and livestock handling. 2) Establishment of three fish ponds.
Total Output Cost(Ushs Thousand):	1.500	0.348
		4.614

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Gou Dev't:	1.500	0.348	4.614
Ext Fin:	0.000	0.000	0.000
A.I.A:	0.000	0.000	0.000
Output: 75 Purchase of Motor Vehicles and Other Transport Equipment			
Improved service delivery of NAGRC&DB	In order to improve service	1) Equipping Center farms with ten	
Improved service delivery of NAGRC&DB	delivery of NAGRC&DB, the	motorcycles and two double cabin	
	Purchase of Motor Vehicles for	pickups.	
	project monitoring and 15		
	motorcycles is at delivery level.		
	The procurement of a project		
	vehicle is at delivery level		
Total Output Cost(Ushs Thousand):	0.625	0.010	0.500
Gou Dev't:	0.625	0.010	0.500
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 for	N/A	1) Three farms mechanized with three	
improved production and productivity of animals	N/A	tractors and implements.	
through pasture establishment and harvesting.			
Improved mechanization of farms and ranches for			
improved production and productivity of animals			
through pasture establishment.			
Total Output Cost(Ushs Thousand):	0.180	0.066	0.600
Gou Dev't:	0.180	0.066	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			
Acquisition of genetic and non-genetic materials	1) The Architectural Designs for	1) Community breeding efforts equipped	
for massive breeding on and off NAGRC&DB	head office/ Gene bank is in place.	with high grade semen(20,000) and	
farms and ranches.	2) Feasibility study/situation	associated consumables.	
	analysis was under taken for proper	2)	
	planning and strategic direction of		
	the Entity.		
	3) Construction of three valley		
	tanks at Aswa Ranch is at design		
	level and real works shall		
	commence in quarter two.		
	4) The Purchase of fencing		
	materials and fencing twenty (20)		
	Kilometers is at delivery level.		
Total Output Cost(Ushs Thousand):	3.669	0.805	1.000
Gou Dev't:	3.669	0.805	1.000
Ext Fin:	0.000	0.000	0.000

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A.I.A:	0.000	0.000	0.000
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V5: VOTE CHALLENGES FOR 2019/20 AND ADDITIONAL FUNDING REQUESTS

Vote Challenges for FY 2019/20

Inadequate development funds

Development funds to handle the dilapidated infrastructure (Perimeter fencing, animal handling structure, water reticulation, accommodation on farms and ranches) are inadequate. This has hindered gender and equity in recruitment since the environment is not supportive.

Inadequate salaries and wages to motivate scientists

The institution's wage bill is below the required levels to recruit and retain high caliber scientists who can deliver the institutions mandate of breeding and genetic development.

Inadequate funding,

This 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 appropriate breeding technologies since breeding is an expensive venture; this has affected the production and productivity of farm animal genetic resources yet genetics are key to the improvement of the livestock sector.

Land encroachment:

This is a challenge on government center farms and ranches due to lack of legal and clear ownership where all powers in regard to land are vested in the chairman Uganda land commission. NAGRC&DB is just a user, a factor which hinders easy litigation of the encroachers and delayed eviction hence loss of 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 has for long lacked mechanization equipment such as earth movers to remove thickets, open farm roads, excavate valley tanks and dams as well as tractors for farm transport and production. Absence of these has hindered equity and gender development.

Disease outbreaks and tick resistance:

Disease outbreaks have come with all associated costs during operations which hinders performance and delivery of the institution's mandate. However, the institution is putting in place mitigation measures to avert the trends

Table V5.1: Additional Funding Requests

Additional requirements for funding and outputs in 2019/20	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 : 14 Multiplication of pure beef breeds & appropriate crosses	
Funding requirement US\$ Bn : 57.000	The community breeding programme will support the farmers who are the largest owners of animals which animals are poor performers. This will support both the NDPII increased access to critical farm inputs and increased production and productivity through breeding and production of high quality genetic and fast growing animals.
OutPut : 72 Government Buildings and Administrative Infrastructure	
Funding requirement US\$ Bn : 20.000	The effort will support the beef export promotion strategy.