

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	FY2018/19 Outturn	FY2019/20		FY2020/21 Proposed Budget	MTEF Budget Projections			
		Approved Budget	Spent by End Sep		2021/22	2022/23	2023/24	2024/25
Recurrent Wage	2.526	4.028	0.970	4.028	4.028	4.028	4.028	4.028
Non Wage	1.553	5.870	1.048	5.870	7.044	8.453	10.144	12.173
Devt. GoU	6.324	53.344	7.480	53.344	53.344	53.344	53.344	53.344
Ext. Fin.	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
GoU Total	10.403	63.242	9.498	63.242	64.416	65.825	67.516	69.545
Total GoU+Ext Fin (MTEF)	10.403	63.242	9.498	63.242	64.416	65.825	67.516	69.545
<i>A.I.A Total</i>	2.004	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Grand Total	12.407	63.242	9.498	63.242	64.416	65.825	67.516	69.545

(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

Performance for Previous Year FY 2018/19

KEY ACHIEVEMENTS IN FY 2018-19

Subprogram: Dairy Cattle

1. Produced a total of 1321 calves of improved dairy calves

Subprogram: Beef Cattle

1. Conducted breeding sensitization on 3795 farms and ranches across the country.
2. Strengthened six (6) breeder societies/ associations. For instance, Uganda pig breeders' society was supported in setting up a web site and registry.
3. Produced 1010 calves beef calves.
4. Through conservation program aimed at maintenance of the regional gene Bank, the accumulated total number of animals selected from the elite local herd was 1148 and a total of 71 animals were selected and recruited into the superior herd of local animals.

Subprogram: Poultry

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1. To enhance both income and nutrition security among the resource poor households through rural poultry Development programme, the total number of farmer preferred scavenging/ backyard birds produced stood at 392,590 kuroiler chicks were produced. The Chicks were extended to 131 households in 21 Districts of Uganda of which 58 were female-led, 50 male headed, a number of schools and 3 youth groups and 20 elderly.

Subprogram: Small ruminants and non-ruminants

1. The total number of kids produced stood at one thousand four hundred and five (1783) kids from the center farms and ranches and these are reared for future extension to farmers.
2. The total number of piglets produced stood at 1552 Piglets of Cambrough, large white and Danish landrace produced at the centre farms of Njeru in Buikwe District and Livestock experimental station in Wakiso District. This contributed to the improved genetics pool of pigs extended to farmers in the country in the 39 different Districts of Uganda.

Subprogram: Pasture and feeds

1. 679 acres of pasture and forages were established at different farms and ranches of, Aswa, Sanga, Maruzi, and Kasolwe against the set target of 840 acres. The science has been extended to 43 farmers from 8 Districts of Uganda and 51% youth mobilized to engage in pasture development as a business for employment and wealth creation.

Subprogram: National Animal Data Bank

1. The Establishment of a National Livestock identification system through branding is at the execution stage after acquiring all the branding tools stage of implementation. Two thousand seven hundred and fifty (2750) animals from 12 center farms and ranches have been branded.

Subprogram: Assisted reproductive technologies.

1. The entity strengthened maintenance of the national Bull stud through maintenance of 26 beef and dairy cattle breeds where semen collection, evaluation and packaging takes place.
2. The total number of technicians trained to strengthen the breeding workforce in the country stood at seven hundred one (701).
3. The total number of farmers trained stood at a 2076 from 28 Districts of which 80% were youth, 15% were elderly and 5% were disabled. The effort was geared towards increasing access to critical farm inputs.
4. The accumulated total number of semen dozes produced stood at 6341 in order to strengthen breed improvement in the country.
5. The accumulated total number of liquid Nitrogen liters stood at 32,950 and distributed to various parts of the country for extension of breeding services to farmers.

Project: Strategic Intervention for Animal Genetic Improvement

1. There was continued support to identify three thousand seven hundred and fifty (3750) animals for freeze branding on the 12 center farms are yet to be branded as they have been identified.
2. The entity's breeding environment was strengthened through establishment of four (4) gender and equity responsive structures
3. Construction of three valley tanks at Aswa Ranch. The establishment of three (03) pig stys at LES, Kasorwe and Njeru stock farm were completed awaiting handover.
4. In the need to increase access to farms and ranches 11.4KM of dirt road for Nshara were opened and graded. This intervention is aimed at increasing accessibility to the ranches and controls of bush fires. In the need to increase access to farms and ranches 11.4KM of dirt road for Nshara were opened and graded. This intervention is aimed at increasing accessibility to the ranches and control of bush fires.
5. One station wagon was acquired for improved service delivery. Fifteen motorcycles were acquired to support community breeding hence improved service delivery. One station wagon was acquired for improved service delivery. Fifteen motorcycles were acquired to support community breeding hence improved service delivery.
6. The Water reticulation system for Njeru and Aswa ranch is in place.
7. Internationally, a number of engagements have been undertaken as follows:-

(i) Scientific presentation on NAGRC&DB genetic center strategy on animal breeding at Tampa, Florida, United States; engagement meetings with reproductive experts in Rome, Italy; Animal genetic resources meeting, coffee book workshop, regional gene bank launch and sustainability issues in Nairobi, Kenya.

(ii) Regionally, there has been a number of engagements with ASERECA, EAC, IGAD and member countries consisting of Uganda, Kenya, Tanzania, Rwanda, Burundi, Ethiopia, Eritrea, Djibouti, Somalia, Comoros Republic, South Sudan and Sudan. We recently launched the regional gene bank for Eastern Africa at Livestock Experimental Station, Entebbe. Locally we have a number of engagements with Universities like Makerere University, Mbarara University of Science and Technology, Busitema University, Muni University, St. Joseph's University Kisubi etc; Local NGOs and CBOs like Heifer International program; Farmer Institutions like Livestock Development Forum, Dairy farmers Network, Uganda National farmers Federation, Ankole Long Horned Cattle Breeders association, Reline Farmers Network etc. A number of collaborative efforts have been undertaken with Ministry, Department and Agencies such as MAAIF, Ministry of Science and Technology, DDA, NARO, COCTU, UNCST etc. Effective efforts were also made to engage with Ministry of Finance Officials, Parliament and Local Government leaders e.g. RDC's, CAOs and district chairpersons.

(iii) NAGRC&DB was linked to the global plan of action for management of animal genetic resources in Rome Italy.

(iv) Partnerships with several breeders associations such as the French breeders' association, Italian breeders' society and Bos Blanco brahman breeders were also established. During the quarter, strategic partnerships were created with Cevasantanimale in France; Vriesitlaboratorium,

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Invitro-Africa and Marlothii Embryo Services in South Africa for capacity building on improved reproduction.

Performance as of BFP FY 2019/20 (Performance as of BFP)

1. In the bid to improve production and productivity through Rural Poultry Development Program, The total number of improved birds produced stood at 54,542 Kuroiler and Rainbow rooster. Installation of 2 new hatcheries is being done at Lusenke stock farm in Kayunga District and Kasolwe stock farm in Kamuli District. The chicks that were produced in the quarter were distributed to households in 15 Districts of Uganda.
 2. Under goat improvement and conservation at the centre farms of Nshaara, Ruhengyere, Sanga and Kasolwe, Rubona, and Njeru the total number kids produced stood at 812 compared to 500 that was planned. The good performance was as result of an abundant pastures and good farm management.
 3. In order to improve food security through pig breeding and production, the total number of improved pigs produced stood at 356 pure piglets of cambrough, large white, and Danish landrace breeds out of 500 planned for Q1, this contributed to the improved genetics pool of pigs extended to farmers in the country in 12 different Districts of Uganda.
 4. In the effort to improve production and Productivity of the National herd, the total number of cross bred animals produced stood at 502 from the center farms of Ruhengyere, Kasolwe, Lusenke, Aswa and Maruzi, Sanga, Rubona, and Njeru and Bulago. The produced animals are reared for future extension of improved quality genetics to different Ugandan dairy farmers of different Agro ecological zones.
 5. In order to rapidly increase the National herd, NAGRC&DB embarked on massive synchronization all over the centre farms and ranches. The total number of animals synchronized served with high grade semen stood at 1,077 and the conception rates were 74% a factor which calls to roll out the program to farmers to reduce loss of breeding time.
 6. In order to achieve a two fold increase in the improved national herd, NAGRC&DB embarked on a massive community breeding program targeting farmers in all regions of the country. 1,014 cows and heifers have been synchronized and inseminated with high grade semen for both dairy and beef breeds in all regions of the country which includes Friesians, Jerseys, Ayrshire, Guensey, Brahman and Boran in all regions of the country.
 7. The efforts to improve quality genetics in the country were enhanced through production of 623 calves from pure dairy herd this was intensified at Njeru, Rubona and Livestock Experimental Station, Bulago, and Ruhengyere.
 8. In the dire need to establish, promote and strengthen breeding in the country, the total number of breeder societies/ Associations strengthened stood at 2 in the different parts of the country which included Ankole long horned cooperative society and Boran pedigree group.
 9. Through livestock breeding for beef production, a total of 841 pure beef bred animals were produced from the government Centre Farms and Ranches of Ruhengyere, Nshaara, Sanga, Maruzi and Aswa against a set target of 875calves born the reason for the variation was because of the presence of good young breeding cows on the ranches and sound general management.
 10. Through conservation program aimed at maintenance of the indigenous animal breeds, a total of animals from the elite local herd were produced 628 against a quarterly target of 875. Availability of pastures and other forage was responsible for the performance.
 11. In order to strengthen breed improvement in the country, Artificial Insemination which is the cheapest means of genetic improvement has been strengthened through production of 12,894 dozes of semen for both dairy and beef, 7,883 dozes were extended to farmers in all regions of Uganda.
 12. In the dire need to strengthen the breeding workforce in the country, NAGRC&DB trained 64 artificial insemination technicians from 39 Districts across Uganda.
 13. In the bid to increase farmer awareness in assisted reproductive technologies, the total number of farmers trained stood at 3,464against a target of 2,500.
 14. Liquid Nitrogen as a medium for preservation breeding materials and an agent for transportation and preservation of semen for artificial insemination, in order to support the above function a total of 18, 210 Liters of liquid nitrogen were distributed to farmers across the country.
 15. The total number of farmers sensitized in breeding stood at 923 in the centre farms and ranches across the country.
 16. In the bid to protect and conserve the environment, a total of 4,347 forage trees were planted for environmental protection to meet budget crosscutting issues.
 17. In order to improve livestock performance through Livestock Nutrition, 218 acres of pasture and forages were established at different farms and ranches of Ruhengyere, Sanga, Lusenke, and Kasolwe, the science has been extended to 64% farmers from 15 Districts of Uganda and 58% youth mobilized to engage in pasture development as a business for employment and wealth creation.
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18. In the preservation of animal feed to counter dry season feeding, the tons of silage produced and conserved stood at 903 tons.

19. In the need to increase access to farms and ranches, 4 kilometers of farm roads were opened and graded at Livestock Experimentation Station at Entebbe. This intervention is aimed at increasing control of bush fires.

20. To increase an enabling environment for breeding and production, the following interventions have been undertaken under the NAGRC & DB Strategic Intervention for Animal Genetics Improvement Project (SAGIP):- construction of staff houses, Administration Block, Manager's House and Latrine, dairy cattle sheds, Large Feed mill, Spray race, Hatchery and Brooder Units, Poultry structures, Piggery units, modern Feedlot for cattle is ongoing in Kasolwe, Lusenke, Maruzi and Rubona.

FY 2020/21 Planned Outputs

- Dairy breeding, promotion of Dairy breeds associations and Dairy breeder societies
- Multiplication of pure Dairy animals & appropriate crosses
- Promotion of dairy cattle breeding
- Promotion of beef cattle breeding
- Strengthening and maintenance of dairy & beef bull, billy & boar studs.
- Training, refreshing and facilitating AI and MOET technicians
- Providing breeding-training to farmers and other stakeholders along the ARTs value chain
- Production, procurement and sale of semen, eggs, ova, embryos and their associated equipment
- Production, procurement and sale of liquid nitrogen and associated equipment
- Strengthening and maintenance of state-of- the-art ARTs laboratories
- Breeding & multiplication of meat goats
- Breeding & multiplication of pigs
- Production and sale of founder brood stock of fisheries resources.
- Multiplication of pure beef breeds & appropriate crosses
- Establishment & maintenance of inter-agency and public private partnership (PPP) linkages
- Beef breeding, promotion of beef breeds associations and beef breeder societies.
- Conservation and utilization of indigenous Animal Genetic resources.
- Develop and maintain collaborative linkages for the establishment and development of a National Animal identification system
- Evaluation and multiplication of improved pasture and fodder germ-plasm
- Industrial production of milk and allied products
- Production and distribution of chicks
- Production, procurement and sale of liquid nitrogen and associated equipment.
- Production, procurement and sale of semen, eggs, ova, embryos and their associated equipment
- Promotion of the identified, established and economically viable poultry genetic resources
- Providing breeding-training to farmers and other stakeholders along the ARTs value chain
- Promotion of the identified, established and economically viable fish breeds.
- Monitoring and evaluation strengthened
- Human Resource management & development.

Medium Term Plans

1. Strengthening the Gene Bank.
2. Characterization of the animals, establishment of the genetic structure and relations.
3. Crossbreeding with exotic germ plasms.
4. Conservation of the indigenous germ plasms.
5. Implementation of the breeding plan.
6. Building the capacity of farmers to produce for export.
7. Turning ranches into centres of excellence.

Efficiency of Vote Budget Allocations

Resources have been allocated to key priority areas that directly address the proposed objectives in NDP III and Agriculture Sector Strategic Plan III.

Vote Investment Plans

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1. Completion of the Gene Bank Head Quarters in Entebbe
2. Two Artificial Insemination Laboratories in Aswa and Lusenke respectively
3. Learning Centre in Lusenke Stock Farm
4. Establishment of Apiary breeding sites.
5. Construction of farm roads
6. Fencing of the Gene Bank Head Quarters
7. Completion of the buck stud in Lusenke stock farm
8. Administration block in Aswa, Sanga, Nshara and Ruhengyere ranches
9. Construction of staff houses for ranches
10. Paddocking of NAGRC&DB ranches
11. Construction and maintenance of critical livestock infrastructure such as goat houses, pig pens and animal handling crushes.
12. Installation of milk processing equipment in Lusenke and Kasolwe stock farms respectively.

Major Expenditure Allocations in the Vote for FY 2020/21

1. Procurement of live animals , embryos and semen
2. Completion of the Gene Bank Head Quarters in Entebbe
3. Construction of two Artificial Insemination Laboratories in Aswa and Lusenke respectively
4. Construction of a Learning Centre in Lusenke Stock Farm
5. Establishment of Apiary breeding sites.
6. Construction of farm roads.
7. Fencing of the Gene Bank Head Quarters
8. Completion of the buck stud in Lusenke stock farm.
9. Construction of Administration block in Aswa, Sanga, Nshara and Ruhengyere ranches
10. Construction of staff houses for ranches.
11. Paddocking of NAGRC&DB ranches
12. Construction and maintenance of critical livestock infrastructure such as goat houses, pig pens and animal handling crushes.
13. Installation of milk processing equipment in Lusenke and Kasolwe stock farms respectively.

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				
	2019/20 Plan	2019/20 Q1 Actual	2020/21 Target	2021/22 Target	2022/23 Target
• Percentage change in the utilization of improved germplasm.	15%	4%	16.2%	17%	17.5%

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

Billion Uganda shillings	2018/19	2019/20		2020/21	MTEF Budget Projections			
	Outturn	Approved Budget	Spent By End Q1	Proposed Budget	2021/22	2022/23	2023/24	2024/25

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56 Breeding and Genetic Development	9.760	63.242	9.443	63.242	64.416	65.825	67.516	69.545
Total for the Vote	9.760	63.242	9.443	63.242	64.416	65.825	67.516	69.545

V4: SUBPROGRAMME PAST EXPENDITURE OUTTURNS AND PROPOSED BUDGET ALLOCATIONS

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

Billion Uganda shillings	2018/19	2019/20		2020/21	Medium Term Projections			
	Outturn	Approved Budget	Spent By End Sep	Proposed Budget	2021/22	2022/23	2023/24	2024/25
<i>Programme: 56 Breeding and Genetic Development</i>								
01 Headquarters-NAGRC&DB	3.145	5.181	1.471	5.761	5.908	8.341	8.959	8.855
02 Dairy cattle	0.110	0.124	0.015	0.250	0.300	0.320	0.320	0.420
03 Beef cattle	0.104	0.119	0.006	0.250	0.300	0.320	0.330	0.430
04 Poultry	0.048	0.902	0.308	1.000	0.300	0.320	0.323	0.423
05 Small ruminants & non ruminants	0.068	0.110	0.008	0.220	0.300	0.320	0.340	0.550
06 Pasture and feeds	0.170	0.200	0.018	0.352	0.400	0.420	0.420	0.630
08 National Animal Data Bank	0.022	0.025	0.012	0.015	0.300	0.320	0.340	0.650
09 Fish breeding and production	0.025	0.034	0.005	0.050	0.040	0.050	0.060	1.022
10 Assisted Reproductive Technologies (ARTs)	0.310	3.204	0.145	2.000	3.224	2.070	3.080	3.220
1325 NAGRC Strategic Intervention for Animal Genetics Improvement Project	6.137	53.344	7.455	53.344	53.344	53.344	53.344	53.344
Total For the Programme : 56	10.138	63.242	9.443	63.242	64.416	65.825	67.516	69.545
Total for the Vote :125	10.138	63.242	9.443	63.242	64.416	65.825	67.516	69.545

N / A

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

FY 2019/20		FY 2020/21
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		

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Output: 72 Government Buildings and Administrative Infrastructure

1) Establishment of thirty (34) gender and equity responsive structure for both management and livestock handling in all Agro ecological zones where NAGRC farms and ranches are located. These are to be established at at Kasolwe and lusenke stock farms.

Construction of six gender and equity responsive structure is underway.

Contracts have been signed for setting up three fish ponds for Production of fingerings for fish farmers constructed.

Padocking of five hundred (500) acres at Kasolwe stock farm is being executed.

Three pig stys are being constructed at Kasolwe Stock farm.

At least 28 gender responsive government buildings and infrastructure constructed on the NAGRC&DB center farms (Lusenke, Kasolwe, Nshara, Aswa and Ruhengyere)

At least 50 kms of NAGRIC and DB Centre farms (Nshara , Njeru, Ruhengyere , Maruzi and Kasolwe) fenced. At least 10 land titles secured for NAGRIC & DB Centre farms.

Total Output Cost(Ushs Thousand):	16.522	1.805	17.788
Gou Dev't:	16.522	1.805	17.788
Ext Fin:	0.000	0.000	0.000
A.I.A:	0.000	0.000	0.000

Output: 73 Roads, Streets and Highways

Ten (10) kilometers of farm roads established at Lusenke stock farm for increased farm access for all farmers.

Construction of a 10km farm road in Lusenke Stock Farm is being implemented.

At least 10km of farm roads established on NAGRC&DB center farms (Nshara, Lusenke, Kasolwe and Aswa) , to ease access to the farms and also the communities around the farms.

Total Output Cost(Ushs Thousand):	0.250	0.075	0.500
Gou Dev't:	0.250	0.075	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

1) Equipping of the poultry units at Lusenke, Livestock and experimental Station with two hatcheries, 5 Specialized Mobile Diagnostic & ART system (MDAS), 100 Ai equipment.

2) Two (2) generators, Mini Ln2, 1 feed mill, Haylage baler, Two (2) forage chopp

Contracts have been signed waiting for the delivery of Five (5)

Specialized Mobile Diagnostic & ART system (MDAS) to support community breeding, 1 Station with two hatcheries, 1 Power backup generators for lusenke , two hatcheries , One Mini LN2, 1 feed mill, two Haylage balers, 2 forage choppers for lusenke and Kasolwe, assorted Equipment. Acquisition of fifty (50) Ai equipment for community breeding. and one standby generators for hatcheries

At least 10 sets of specialized machinery and equipment (e.g Feed mill Silos, AI equipment, Mobile ART equipment, Surgical kits, Ultrasound scans, DNA Sequencer) acquired to enhance community breeding on NAGRIC & DB farms.

Total Output Cost(Ushs Thousand):	8.120	1.549	7.976
Gou Dev't:	8.120	1.549	7.976
Ext Fin:	0.000	0.000	0.000

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A.I.A:	0.000	0.000	0.000
Output: 79 Acquisition of Other Capital Assets			
1) Acquisition of 300 high grade dairy in-calf heifers, embryos, 184 high grade Pigs, sows (144) & boars (40), Stock of 200 goats (40 bucks and 160) Nannies and 100 honey bee colonies, acquisition of 35,000 parent stock day old chicks and one stud.	35,000 parent stock day old chicks have been acquired. fencing materials assortment has been acquired for Kasolwe stock farm, Nshaara, and lusenke. Assorted laboratory equipment and consumables to accelerate community breeding Have been acquired at the bull stud. One hundred Honey bee colonies has acquired.	Feed mill dryer, Apiary sites, Water reticulation, Bull stud fence, Honey processing unit, bee hives acquired to enhance breeding.	
Total Output Cost(Ushs Thousand):	12.770	0.846	7.941
Gou Dev't:	12.770	0.846	7.941
Ext Fin:	0.000	0.000	0.000
A.I.A:	0.000	0.000	0.000

V5: VOTE CHALLENGES FOR 2020/21 AND ADDITIONAL FUNDING REQUESTS

Vote Challenges for FY 2020/21

1. Land encroachment at some centre farms e.g Njeru stock farm;
2. Ticks and diseases that affected some of the animals at NAGRIC centre farms.
3. Machine breakdown e.g Liquid Nitrogen Plant that requires high maintenance costs.
4. Inadequate logistics to transport semen to hard to reach areas.
5. Low staffing has also continued to affect service delivery.

Table V5.1: Additional Funding Requests

Additional requirements for funding and outputs in 2020/21	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.	
Funding requirement US\$ Bn : 2.200	Filling critical positions e.g Technical Manager Breeding, Public Relations Officer , Farm Manager , Corporation Secretary among others, can directly enhance service delivery.
OutPut : 72 Government Buildings and Administrative Infrastructure	
Funding requirement US\$ Bn : 50.000	Breeding infrastructure is critical in producing what is enough for the market e.g abattoirs. This in turn boosts beef and dairy exports.
OutPut : 75 Purchase of Motor Vehicles and Other Transport Equipment	
Funding requirement US\$ Bn : 6.000	Liquid nitrogen requires specialized delivery vans to enhance breeding in hard to reach areas.