

REPUBLIC OF RWANDA



**MINISTRY OF AGRICULTURE AND ANIMAL RESOURCES
P.O BOX: 621 KIGALI**

ANNUAL REPORT 2022/23



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FOREWORD



In the realm of economic development and societal well-being, agriculture stands as a pivotal force. In Rwanda, this sector not only forms the cornerstone of our economy but also serves as the primary source of livelihood for a majority of our citizens. As of 2022, agriculture's contribution to Rwanda's Gross Domestic Product (GDP) was 25%, with a significant 34% share in national export earnings.

Guided by the Strategic Plan for Agriculture Transformation (PSTA 4), the 2022/23 fiscal year marked the fifth year of this ambitious strategy, running concurrently with the National Strategy for Transformation (NST1). A thorough evaluation of these strategies has revealed commendable progress in numerous planned activities, while also identifying areas requiring intensified efforts to meet the NST1 targets by 2024. Key focus areas include enhancing crop productivity, expanding the capacity of the National Strategic Grain Reserve (NSGR),

implementing sector de-risking mechanisms, and promoting practices resilient to climate change.

The 2022/23 fiscal year was notably marked by the challenges of climate change, which significantly impacted crop production. In response, we provided farmers with essential irrigation equipment and fertilizers to bolster production. Additionally, those severely affected by natural disasters received crucial support through food distributions from the NSGR.

Despite the remarkable growth in agricultural production over the past decade, issues of food security and nutrition persist. The Comprehensive Food Security and Vulnerability and Nutrition Analysis Survey (CFSVA 2021) revealed that 20.6% of our population faces food insecurity, and although there has been a decrease in stunting rates from 34.9 % in 2018 to 32.4 % in 2021, it remains a concern.

As we approach the final year of PSTA4 implementation, I urge all stakeholders and partners in the agriculture sector to focus on impactful activities that will enhance the sector's performance. Challenges such as climate change, soil erosion, urbanization pressures on agricultural land, fluctuations in the global supply chain of agricultural inputs, price volatility, limited financing, and the need for increased digitalization and capacity development in the sector must be addressed with urgency and determination.

The Ministry of Agriculture and Animal Resources is committed to collaborating with partners at local, regional, and international levels to enhance food production through a holistic food system approach. Looking towards 2050, we envision an agriculture sector transformed by professional farmers and commercialized value chains.

Our confidence in this vision is bolstered by the enduring collaboration with our partners and stakeholders. Past experiences have shown a strong commitment to overcoming challenges and unlocking the potential of our farming systems. I am confident that with continued collaboration and support, we will successfully navigate this journey of agricultural transformation.

Dr. Ildephonse MUSAFIRI

Minister of Agriculture and Animal Resources

MINAGRI 2022/23 HIGHLIGHTS

Climate resilience interventions

- Radical terraced construction: 138,579 ha
- Progressive terraces: 1,008,855 ha
- Area under irrigation: 71,585 ha
 - Marshland developed: 37,273 ha
 - Hillside developed: 9,439 ha
 - Small scale irrigation (SSIT): 24,873 ha

Social protection:

- 451,612 cows so far distributed to poor families including 24,036 distributed this fiscal year 2022/23.
- Small stock distributed to vulnerable families:
6,990 pigs, 2,624 Sheep, 4,807 Goat and 103,402 poultry were distributed to vulnerable families

Agriculture export Earnings:

- Earnings generated from export is USD 857.2 million
- Agriculture contributed 34% of the total National exports
- 20,064.9 MT of coffee exported, 39,008.9 MT of tea exported and 74,487 MT of horticulture exported.

Agri-GDP growth:

- Agri GDP growth reached 2 % in 2022
- 25% of agriculture contribution to GDP in 2022

Agriculture finance / insurance:

- Agriculture finance stands at 6 %
- 33,269 ha of crops insured
- 48,962 cows insured

Animal products:

- Milk production stands at 1,061,301 MT
- Meat production stands at 197,778 MT
- Fish production stands at 46,495 MT
- Eggs production stands at 17,344 MT
- Honey production stands at 7,250 MT

Food security and nutrition:

- Percentage of food secured households stands at 79.4%

Land use

Land mechanized increased from 62,845.5 ha to ha72,013 ha

Percentage of mechanized farm operations stands at 42%

Percentage of population employed in agriculture: 64.5%

Land consolidation: 773,320 ha in 2023A and 592,966 ha in 2023B

Animal health and Genetic improvement

- Cows inseminated: 122,613
- AI Calves born: 43,500

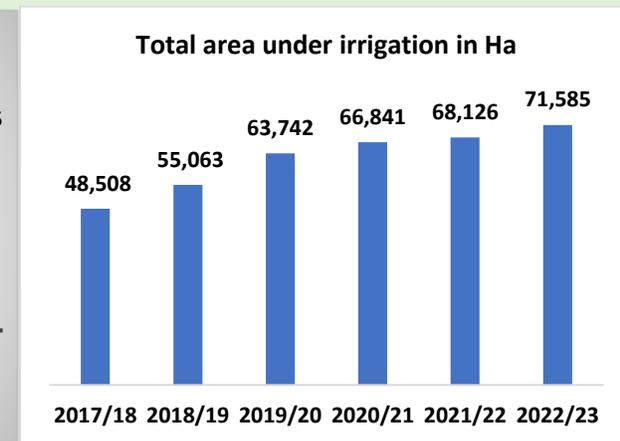
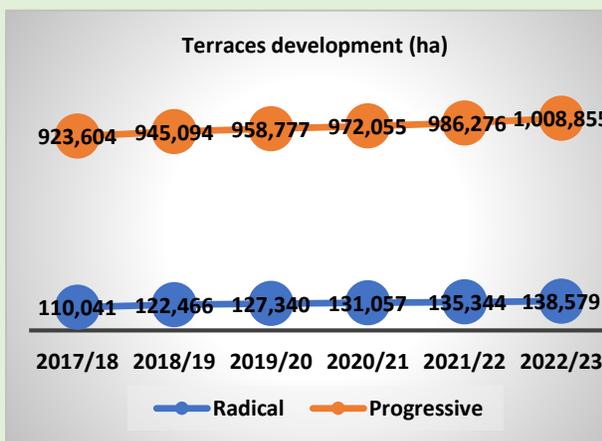
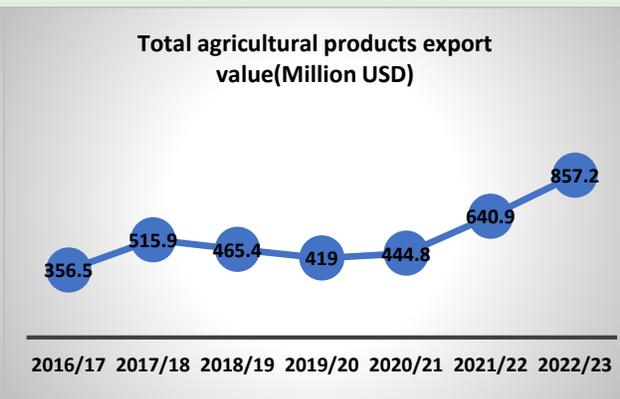
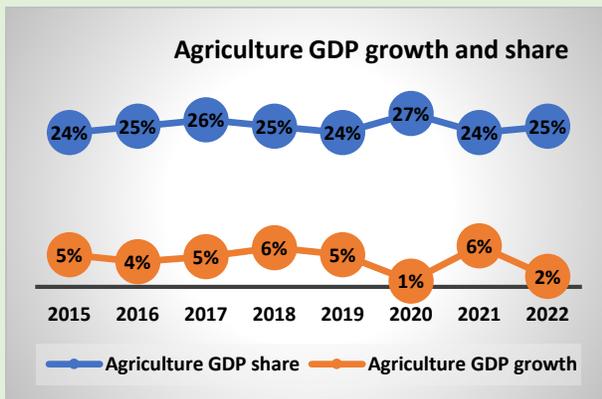
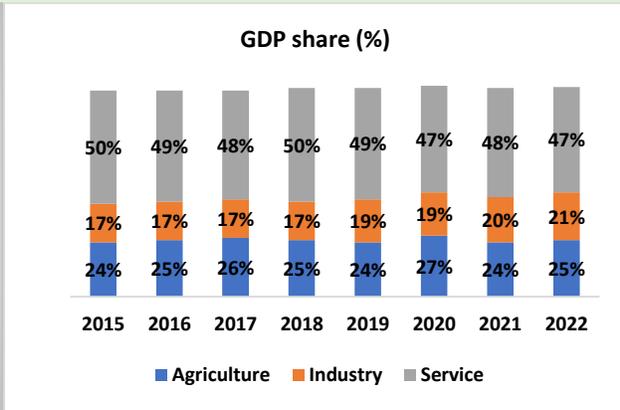
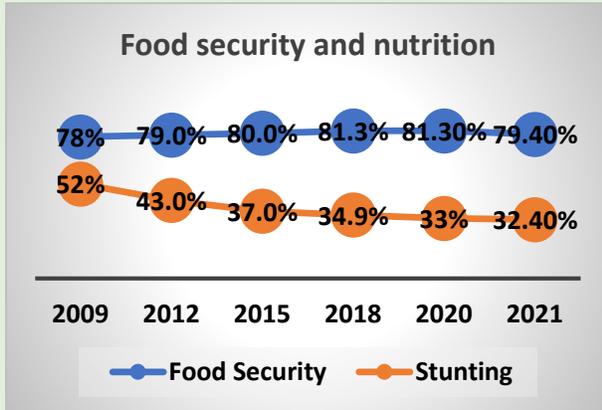
Agro-processing:

Milk supplied to agro-processing plant: 81,200,298 liters

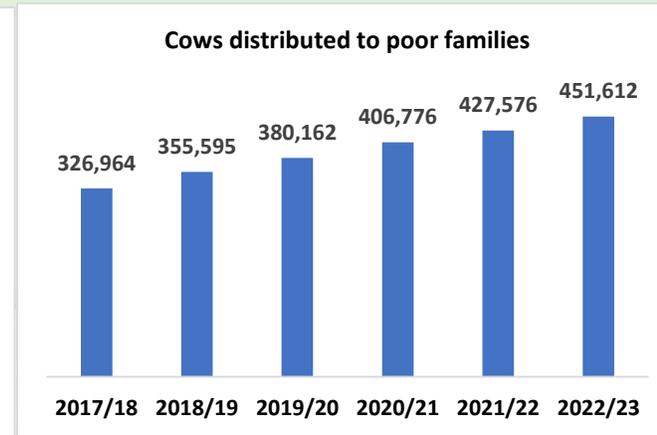
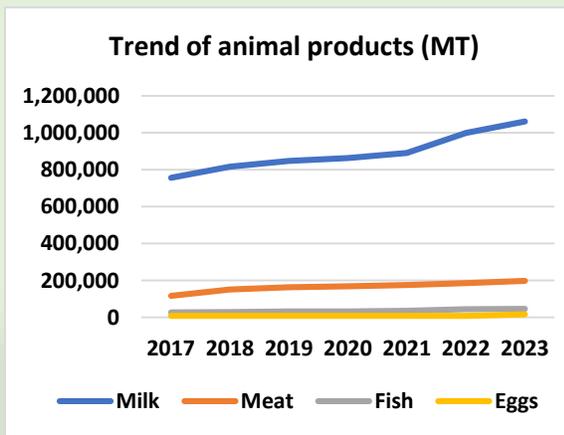
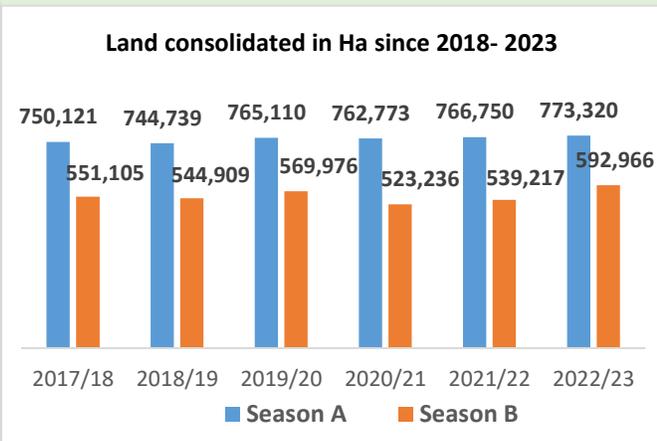
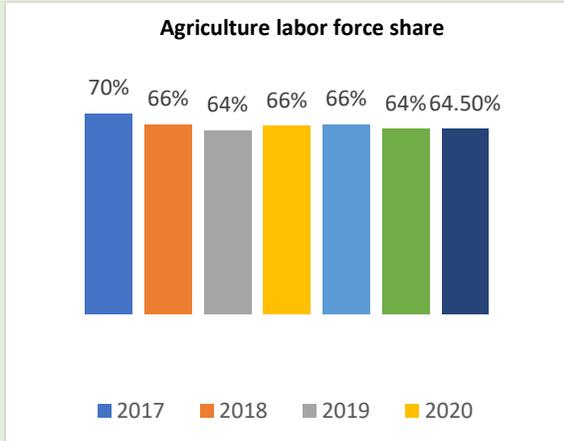
11,061 MT of Cassava supplied to Kinazi Plant

49,469 MT of maize supplied to Processing industries

MINAGRI 2022/23 HIGHLIGHTS



MINAGRI 2022/23 HIGHLIGHTS



EXECUTIVE SUMMARY

The 2022/2023 fiscal year was the fifth year of the implementation of Strategic plan for agriculture transformation (PSTA 4). PSTA 4 has four priority areas: (i) Innovation & Extension; (ii) Productivity & Resilience; (iii) Inclusive markets & value addition; (iv) Enabling Environment & Responsive Institutions. In combination, these priority areas provide a strategic orientation towards achieving the transformation of the Rwandan agriculture from a subsistence to a value creating sector, which contributes to the national economy and ensures food and nutrition security in a sustainable way. The 2022/2023 Agriculture IMIHIGO (performance contracts) were set in order to achieve the strategic objectives for the Agricultural Sector. This fiscal year has prioritized the development of Agriculture infrastructures to support productivity and commercialization of agriculture outputs. Based on the country topography, more efforts were deployed in land management to improve land productivity and stability. The total area of land under conservation with radical and progressive terraces are respectively 1,008,855 ha and 138,579 ha of which 22,579 ha of progressive and 3235.7 ha of radical terraces were developed in this financial year. Irrigation schemes have allowed farmers to move from rain-fed agriculture to diversified high value crops hence resulting in increased cropping intensity and land productivity. The country has registered 71,585 ha under irrigation - including 37,273 ha of marshlands, 9,439 ha of hillsides and 24,873 ha of small scale irrigation.

The Ministry continued efforts to contribute to social protection and nutrition through GIRINKA and small stock distribution. So far 451,612 cows have been distributed through GIRINKA program since its initiation. During 2022/2023 fiscal year, the Ministry targeted the distribution of 25,041 cows to poor households and 24,036 was achieved due to the involvement of private sector in this program and pass on model. On the side of Agricultural products export, the export revenues in 2022/23 was \$ 857.2M against \$ 640.9 M earned in 2021/2022 representing an increase of 33.7%. This increase in revenues can be attributed to the good prices offered on international markets, measures put forward by GoR that favoured trade, movement of people after a period of fighting COVID19 spread and favourable climate that increases local production.

The removal of COVID 19 restrictions, opening of businesses and borders opening have also allowed the diversification of export destinations and improvement of regional trade with neighbouring countries. The traditional commodities generated \$ 229.1M in 2022/23 while it was \$185 M in 2021/22, this is an increase of 23.8%. The horticulture exports generated 58 USD in 2022/23 against 42.8 USD Millions recorded in 2021/22 representing an increase of 35.5%.

PROGRESS TOWARDS NST 1

The contribution of agriculture in Rwandan economy is very fundamental. The sector employs 64.5% of the working population and represents about 25 % the National GDP. Vision 2050 takes Rwanda to high living standards by the middle of the 21st century and high quality livelihoods. The implementation of vision 2050 will be done through medium term development Strategy starting from the first National Strategy for Transformation (NST1). NST1 will provide the foundation and vehicle towards achieving the Vision 2050. The table below summarizes the progress made in achieving the targets for NST1 in Agriculture Sector.

Table 1: Summarized achievements against NST1 Targets

Indicators	Baselines 2016/17	Target 2023/24	Achievements by 2022/23	Indicators	Baselines 2016/17	Target 2023/24	Achievements by 2022/23
Ha of irrigation developed	48,508	102,284	71,585	Percentage of farmers using quality seeds on consolidated sites	LSF: 52	75	85.70%
Area of consolidated land (Ha)	635603	980,000	773,320		SSF: 4.8		35.90%
Percentage of farm operations mechanized	25%	50%	42%	Yield of major crops (MT/Ha)	Maize: 1.57	Maize: 2.94	1.7
Area (ha) of Land under erosion control	Radical terraces: 110,905	142,500	138,579		Beans: 1.21	Beans: 2.22	0.6
	Progressive Terraces: 923,604	1,007,624	1,008,855		Irish potatoes: 8.18	Irish potatoes: 14.0	8.2
Quantity of fertilizer applied (Kg/Ha/Annum)	32	75	70.3		Wheat: 0.95	Wheat: 1.77	1.2
MT of Strategic reserves stored	Maize: 123000	140,980	15,478.70		Soy beans: 0.55	Soy beans: 1.28	0.4
	Beans: 61814	69,917	9,832.80		Quantity (MT) of animal products produced	Milk: 776284	1,274,554
Credit to agriculture sector	5.20%	10.40%	6%	Meat: 96457		215,058	197,778
				Eggs: 7475		19,403	17,344



CHAPTER I. INNOVATION AND EXTENSION

The contribution of research in agriculture production is very important, especially in resolving the issues related to agriculture productivity, climate change, pest and diseases control, soil depletion etc. In Rwanda Agricultural research is the engine driving agricultural growth which has resulted to food security, combating malnutrition and reducing extreme poverty in the country. This fiscal year research has focused on development and released high yielding, diseases and pest resistant crop varieties, animal breeds and various technology coping with climate risk agriculture sector. Therefore, this section highlights major interventions carried out micro biotechnology plus both crops and animal-based research accompanied by extensive technology transfer.

1.1. CROP BASED RESEARCH AND EXTENSION

1.1.1. Cereals

Maize hybrid varieties developed for future release.

Twenty new maize hybrid varieties for mid altitudes and 29 for high altitudes were developed by combining CIMMYT inbred lines and RAB parent inbred lines developed locally and targeting specific traits. The new maize hybrid varieties for mid altitudes were evaluated in comparison with one officially released variety and two commercial checks to make 23 entries (Table 2) while the new maize hybrid varieties were evaluated in comparison with one new variety from One Acre Fund, 12 officially released maize varieties and three commercial varieties to make 45 entries.

The table 2 illustrate Maize hybrid varieties released

<i>No</i>	<i>Names</i>	<i>Specific trait</i>	<i>Type</i>	<i>Status</i>	<i>Origin</i>
1	RHMH1706	Extra-early	Hybrid	Officially released	RAB
2	RHMH1707	Early	Hybrid	Officially released	RAB
3	RHMH1708	Early	Hybrid	Officially released	RAB
4	RHMH1604	Extra-early	Hybrid	Officially released	RAB
5	RHMH1806	Early	Hybrid	Officially released	RAB
6	RHMH1801	Early	Hybrid	Officially released	RAB
7	RHMH1628	Early	Hybrid	Officially released	RAB
8	RHMH1631	Early	Hybrid	New	RAB
9	RHMH1816	Early	Hybrid	Officially released	RAB
10	RHMH1808	Early	Hybrid	Officially released	RAB
11	RHMH1807	Early	Hybrid	Officially released	RAB
12	ROMH1701	Extra-early	Open Pollinated Variety	Officially released	RAB

Wheat varieties developed for future release.

A set of seven varieties have been selected from 21 genotypes obtained from Lake Chad Research Institute (LCRI), Maiduguri, Borno State, Nigeria, tested for adaptability to various agro-ecologies of Rwanda, including farmers' fields, in low and highland areas of the country. The preliminary results allowed selecting seven varieties for future release.

Table 3: Characteristics of seven varieties selected for future release

<i>Code</i>	<i>Variety</i>	<i>Pedigree</i>	<i>Origin</i>	<i>Days to maturity</i>	<i>Potential grain yield (kg/ha)</i>	<i>Seed colour</i>
<i>Local</i>	GIHUNDO	ND643/2*WBLL1	CIMMYT	108-115	4000-6000	W*
<i>104</i>	RWT02201	PAVON-76	LCRI	93-97	3200-4200	W
<i>109</i>	RWT02202	AMINA-4	LCRI	100-102	2500-3500	W
<i>111</i>	RWT02203	SIDRAA-1	LCRI	97-105	4000-4500	W
<i>113</i>	RWT02204	SOONOT-5	LCRI	93-95	3000-3500	W
<i>116</i>	RWT02205	REYNA-29	LCRI	104-105	3000-4000	W
<i>121</i>	RWT02206	TEVEE'S'/3/T.AEST/SPRW'S'(2)	LCRI	103-105	3500-4500	W
<i>118</i>	<i>RWT02207</i>	<i>CROW'S/BOW'S'-3-1994/95TEVEE'S'/TADINIA</i>	<i>LCRI</i>	<i>95-97</i>	<i>3000-4000</i>	<i>W</i>



Wheat plantation –Green Gicumbi

Rice varieties evaluated

Eight new rice long grain varieties were evaluated in adaptability trials in four sites, two located in Cyili and two others located in Bugarama . The results showed that there were no significant differences between varieties for grain yield ($P= 0.05$) while there were significant differences for four other traits ($P<0.001$).

Table 4: Performance of eight new rice long grain varieties in adaptability trials

Names	NTP	NPP	PHT	PLE	FT	MT	PAL	PAM	HL	HW	YL	SNK test*
Johnson	21.3	18.4	57.4	98.0	98.0	149.0	9.0	2.4	7.3	2.1	6.0	a
Neri 26	22.4	18.4	81.2	112.0	112.0	166.0	9.7	2.4	7.3	2.3	5.2	a
Neri 15 (Indatwa)	17.1	17.4	71.6	97.8	97.8	143.8	10.0	2.4	6.9	2.2	5.3	a
Fashingabo	23.8	21.2	69.8	110.8	110.8	158.0	8.9	2.4	6.9	2.2	5.7	a
Neri 22 (Ganza)	19.1	16.0	68.7	99.0	99.0	145.5	10.0	2.4	8.6	2.0	4.4	a
Kyeema	20.9	18.8	58.4	101.3	101.3	145.5	9.1	2.4	7.2	2.1	4.8	a
kyeecima	21.8	18.2	85.3	106.5	106.5	164.5	10.0	2.4	7.4	2.2	4.6	a
Muturage	15.7	15.0	99.8	108.3	108.3	161.0	9.6	2.8	7.8	2.7	5.5	a
Meam	20.2	17.9	74.0	104.2	104.2	154.2	9.5	2.5	7.4	2.2	5.2	
CV	17.6	17.2	13.8	9.3	3.9	3.6	**	**	**	**	20.3	
F	2.41	1.44	7.77	8.31	8.31	10.90					0.99	
P	0.056	0.241	<.001	<.001	<.001	<.001					0.5	
Max	30.0	25.3	120.3	28.3	120.0	175.0	10.0	2.8	8.6	2.7	7.9	
Min	8.5	10.7	50.3	14.3	93.0	138.0	8.9	2.4	6.9	2.0	3.0	
Range	21.5	14.6	70.0	14.0	27.0	37.0	1.1	0.4	1.7	0.7	4.9	
**The error or the residual was zero (0). It was not possible the estimate CV, F and P												
* Pairwise comparison using Student-Newman Keuls methods												

1.1.2 Horticulture

Fruits and vegetables are of the prime importance in Rwandan agriculture because they provide the potential for addressing employment challenges, especially among youth and women. They also constitute a huge source of income and nutrition promoting compounds. In addition, they are known to be capital and skills intensive. Therefore, affordable technologies are developed and disseminated to Rwandan farmers through research and technology transfer. The activities implemented during the fiscal year 2022/23 are summarized under this section.

Technology development

Evaluation of entomopathogenic nematodes (EPN) formulations for application on tomato leaves infested with *Tuta absoluta*

Tomato leaf miner (TLM) *Tuta absoluta* is invading Rwanda since 2015. Outbreaks of Tuta has led to extensive spraying of pesticides in tomato and thus less disruptive pest management approaches are urgently needed. *Tuta absoluta* larvae are known to be highly susceptible to a number of species and strains of entomopathogenic nematodes (EPN). However, application of EPN onto the leaves is



challenging because sprays dry up quickly and EPN may die before reaching and attacking the pest. Therefore, a protective formulation is needed that assures EPN can be successfully sprayed onto tomato leaves and survive long enough to enter the leaf tunnels where they are protected and can attack the pest larvae.

Six (6) experiments were implemented between September 2022 and February 2023. Eleven (11) different formulations including 3 oils (Rape seed oil, Sesame seed oil, Addit), 2 gels or thickeners (Carboxymethyl cellulose gel, Kalzan T), 3 surfactants (Glucopon, Namaperfect, Nemaviscum), 2 UV protectants (Zeolite sol 300, Zeolite 10 micron) and water were tested. Positive control, a commercial botanical pyrethrin 5% EC was also included. 1000 EPN of the isolate *Steinernema carpocapsae* RW14-GR3a2 were sprayed in 2 ml of formulations on each leaflet (dose of 500 ij per ml), using small handheld sprayers. Insects used were collected from infested tomato plants

in greenhouses from Kigali and Bugesera districts. Among the 11 tested formulations, the most effective EPN formulations was EPN in rapeseed oil and in alkyl polyglucoside surfactants (Glucopon) with percentage corrected mortality of larva ranging 33-37% and 33-34%, respectively.

Evaluation of different varieties of vegetables

Different vegetable varieties from seed companies have been collected and produced in open field or protected structures at the Horticulture Centre of Excellence (HCoE) in order to evaluate their performance in order to have more option of the good varieties to be recommended to farmers. In the fiscal year, 10 varieties have been introduced and tested (Table below).

Table 2 :List of crop species and varieties obtained from different producers

Crop Species	Variety name	Distributor/ Producer	Special traits and area of production
Tomato	Tomato Cobra F1	Technsem	Suitable to the production in open field
	Tomato Segar F1	East African seed company ltd	Indeterminate variety suitable in protected cultivation
	Tomato Mrembo F1	Omni distributor of Hazera	Indeterminate variety suitable in protected cultivation
	Tomato Rafano	Tri seeds	Determinate variety suitable in protected cultivation
Eggplant	Eggplant Kalenda F1	Technsem	Good variety, elongated black eggplant suitable in open field production
	Eggplant Melina F1	Technsem	Suitable to the production in open field
	Eggplant Djambo F1	Technsem	Suitable to the production in open field
Sweet Pepper	Sweet pepper Simbad F1	Technisem	Green color suitable in open field production
	Sweet pepper Nikita F1	Technisem	Suitable in open & protected cultivation
	Sweet pepper Monaco F1	From France	Red color suitable in greenhouse

Production of grafted passionfruit, watermelon and tree tomato seedlings

Production of horticulture crops have been increased as Rwanda is putting more effort on the cultivation of vegetable in open and protected area. However, there is a big challenge associated to the soil borne disease. Grafting vegetable plants onto resistant rootstocks is an effective tool that may enable the susceptible scion to control soil-borne diseases, environmental stresses and increase yield. A total number of 4200 grafted seedlings of tomato, watermelon and passionfruit has been produced using *Solanum aculeastrum*, bootlegourd and Giant granadilla (*Passiflora quadrangularis* L.)/*P. Ligularis* rootstock. Grafted watermelon and tomato have shown resistance to soil-borne disease compared with non-grafted plants.

Capacity building

In the fiscal year 2022-2023, significant efforts were made to enhance the capacity of different stakeholders. To address the need for high-



quality planting materials, three training sessions were conducted for 86 nursery operators at the Horticulture Center of Excellence located at Kigali. Furthermore, Farmer Field Schools (FFS) were introduced under the Kayonza irrigation and integrated



watershed management project (KIIWP) to educate farmers on fruit trees production and

orchard management, ultimately benefiting 440,000 fruit trees across various sectors (Murama and Kabarondo in Kayonza District,

Remera in Ngoma District). A total of 268 FFS facilitators received training in orchard management techniques, reaching approximately 6,700 farmers. In addition, practical training on pruning and pesticide application was provided. These interventions yielded 255 FFS facilitators who graduated in a ceremony officiated by the Minister of Agriculture and Animal Resources. Training on post-harvest handling and management technologies for

fruits and vegetables was extended to 607 participants, including farmers and district agronomists, emphasizing the importance of preserving product quality and food safety. Addressing pest and disease management, campaigns and training sessions were organized

to combat mango mealybugs, benefiting 4,174 farmers, extension agents, and agricultural officers across various districts. The development and distribution of 1,800 extension materials, such as booklets, leaflets, and guides, played a crucial role in disseminating essential information to farmers and extension officers, covering various aspects of horticulture, from selection of quality planting materials to pest control and post-harvest handling. These initiatives collectively

aimed to improve the horticultural sector and empower growers with the knowledge and

skills needed for successful fruit and vegetable production

1.1.3 Pulses and oil crops

Leguminous crops such as beans, soybean, ground nuts and peas are very important for human consumption, animal feeds and soil replenishment through nitrogen cycling in the soil. These legume crops are known to establish symbiotic relationships with rhizobia bacteria and fix atmospheric nitrogen, thus improving agricultural productivity. Although these crops offer potential solutions to food insecurity, malnutrition, and poverty reduction in Rwanda, their productivity is still very low compared to their potentials. The average annual production is far below the increasing demand for local consumption, export and processing. This

situation is mainly due to no use of improved varieties, limited use of fertilizers, pest and diseases control, postharvest losses, climatic variability leading to drought and flooding, etc. For these reasons, efforts have been made to develop and release new generation of high yielding and resilient bean, soybean seeds to enable access of required quantity and quality seeds to the smallholder farmers. To increase awareness and adoption of the new bean and soybean varieties, demonstration plots have been established across the country and radio talks have been delivered on community radios.

Soybean

Development and release of new varieties is a process that goes through different evaluation stages in order to get elite materials that meet end user preferences. In this year, On-station and On-farm trials were carried out to evaluate and select elite soybean lines to be recommended for future release.

National Performance Trials (NPTs)

A total of 9 soybean varieties (S2302; S3548; S1008-3-2; S2905; S0719-10-3; S2508-6-2; S0302-5-1; S0227; S02324) were developed and evaluated under national performance trials

for their submission to the national variety release committee. The trials were set up in different agro-ecological zones in On-farm trials as well as in four RAB stations (Rubona, Ngoma, Muhanga and Nyagatare). The lines were evaluated as per UPOV scheme for DUS and VCU. Data on main traits such as flower color, pubescence color, plant height, lodging and days to maturity were recorded. At harvesting time data such as yield, seed size and color were recorded for proper analysis. From a vegetative standpoint, out of the 9, five (5) were

given a positive note and will be submitted to the variety release committee for consideration. The selected five lines to be submitted for

release are: **S1008-3-2; S3548; S2508-6-2; S0302-5-1; S0227.**

Demo plots establishment for soybean and bean promotion

In light of improving farmers' capacity and awareness creation of the new bean and soybean varieties, farmer promoters (FPs), FFS, SEDOs, Agrodealers and Sector agronomists have been mobilized, trained and received seeds and fertilizers to establish 2,040 demo plots of beans and 1,560 demo plots of soybean. The training focused on good agriculture practices including the use of Rhizobium, inorganic and organic fertilizers, line spacing, planting rates, weeding time, pest and diseases management

and post-harvest handling. For beans, 12 high yielding and better nutrition varieties have been promoted and for soybean 8 new released varieties have been promoted. The picture below shows demo plot of soybean (Left) at Busoro-Nyanza and Bean (right) at Gitesi-Karongi in 2023B season. A detailed excel sheet showing the number of demo plots established, location and number of participating farmer promoters is attached.

Beans

Varieties developed for future release.

The objective was to develop bush and climbing bean varieties with high mineral content (Fe and Zn), combining resistance to diseases, drought tolerance.

National Performance Trials (NPTs) of 5 climber lines (**RWV 2425; MAC71; RWV 6001; RWV 6008 and RWV 5035**) and 4 bush lines (**RWR 5055; RWR 5062; RWR 5064; and RWR 5070**) were established in different agro ecological zones including East, West and south. The goal of these trials was to evaluate and select the best performing common bean lines to recommend for release. Those lines

were compared with RAB improved common bean varieties (RWV 1129, MAC 44 and RWR 2245) and one local mixture variety as checks and were evaluated at 6 RAB research stations and at 11 on-farm sites covering the major common bean growing areas. All the 9 lines showed significant differences ($p \leq 0.05$) on the major traits evaluated (grain yield, plant heights, days to 50% flowering, days to 50 % podding, number of branches, days to maturity, 100 seed weight and disease score).

Iron and zinc content

The variety **RWV 6008** showed to have high iron content with a mean Fe content of 81.67ppm and a potential of 102.4ppm compared to improved RAB check which has a mean Fe content of 76.8ppm with a potential of

79.9ppm. The best variety in Zn content was **RWR 5070** which had the mean Zn content of 37.2ppm with a potential of 45.2ppm compared to improved RAB check which had 33.4ppm and a potential of 38ppm (Tables 3& 4)

Table 3: Mean Fe and Zn content of tested Bush genotypes

	RAB Check		RWR 5055		RWR 5062		RWR 5064		RWR 5070	
	Fe	Zn	Fe	Zn	Fe	Zn	Fe	Zn	Fe	Zn
	74.0	32.1	72.5	29.7	75.3	32.1	65.7	30.8	70.2	34.5
	78.5	38.0	82.2	39.9	74.6	29.0	64.5	26.6	81.2	39.9
	71.8	29.5	81.0	40.4	86.9	45.0	77.9	41.3	93.1	45.8
	79.8	30.5	63.4	29.1	75.3	32.3	62.2	29.7	65.3	29.4
	79.9	37.0	82.8	36.2	86.6	38.0	62.2	34.1	89.0	36.6
	71.8	29.5	63.4	29.1	74.6	29.0	62.2	26.6	65.3	29.4
Max	79.9	38.0	82.8	40.4	86.9	45.0	77.9	41.3	93.1	45.8
Mean	76.8	33.4	76.4	35.1	79.7	35.27	66.5	32.5	79.75	37.2

Table 4: Mean Fe and Zn content of tested Climbing genotypes

	RAB Check		MAC 71		RWV 5035		RWV 6001		RWV 6008		RWV 2425	
	Fe	Zn	Fe	Zn	Fe	Zn	Fe	Zn	Fe	Zn	Fe	Zn
2022A	67.9	28.8	74.8	30.3	69.4	30.6	79.7	30.6	66.9	28.5	73.3	32.3
2020A	86.2	33.6	92.0	31.2	74.5	26.7	76.9	29.9	79.9	29.7	68.9	35.8
2020B	99.2	37.6	95.9	44.3	95.8	40.7	103.1	46.3	102.4	42.4	71.9	37.4
2021A	73.8	31.4	74.9	31.4	73.4	27.5	85.0	32.1	76.4	32.1	67.2	31.2
2021B	75.9	32.9	99.8	35.1	87.1	32.8	55.4	28.9	82.7	36.8	78.9	31.3
Min	73.8	28.8	74.8	30.3	69.4	26.7	55.4	28.9	66.9	28.5	67.2	31.2
Max	99.2	37.6	99.8	44.3	95.8	40.7	103.1	46.3	102.4	42.4	78.9	37.4
Mean	80.59	32.86	87.5	34.5	80	31.67	80.03	33.6	81.67	33.89	72	33.593

1.1.4 Roots and Tubers

Sweet potato varieties developed for future release.

Cinq varieties selected for future release are RwSP17-130, RwSP17-103, RwSP17-146, RwSP17-255 and RwSP17-055). The varieties were selected and planted in National Performance Trial (NPT). The selected genotypes are potential candidates for release.

Table 5: Average yield performance of sweet potato varieties tested.

Sites/ genotypes	RwaSP17-103	RwaSP17-130	RwaSP17-255	RwaSP16-146	RwSP17-055	Irene	Local check
Kayonza	13.5	14.95	18.65	19.4	14.25	12.65	12.8
Bugesera	24.6	16.5	12.9	24.8	17.5	18	11.15
Rulindo	11.75	14.65	16	17.25	13.45	13.2	9.9
Gakenke	13.55	15.2	14.6	15.2	10.55	11	8.25
Ndego	23.65	17.6	19.6	17.45	24.2	16.45	12.25
Rwamagana	18.65	22.9	14.6	18.3	12.15	12	11.1
Average (t/ ha)	17.6	17.0	16.1	18.7	15.4	13.9	10.9

Cassava varieties for future release

Seven (7) new clones were selected for multi-location trials while 4 clones were selected for farmer participatory selection and for DUS trial. The later form a dossier for variety release for this ending fiscal year (2022-2023). The 7 new cassava clones in multi-location trials will form a pool to select from the most bet varieties for variety release dossier in 2023-2024 fiscal year. According to the selection pressure of 20-25%, it expected to release 1 new variety during 2023-2024 FY.

Table 6: Cassava new varieties for future variety release

No	New cassava clones	Yield (t/ha)	CBSDI on root	CBSDs on root	CMDI	CMDS
1	MKOMBOZI/3	52.4	0	1	0	1
2	IBA141097/5	10.9	1	2	0	1
3	KALAWE/1	5.3	0	1	1	2
4	2016B/521	6.3	0	1	0	1
5	1BA141089A/4	11.8	2	2	0	1
6	YEZASO/3	30.3	3	2	0	1
7	2016/087	32.3	1	3	2	3
8	NAROCAS1	47.1	2	3	2	3
	Average	24.6	1.1	1.9	0.6	1.6

Table 7: Four new cassava varieties on-farm trials for variety release

No	New cassava varieties	CMDi	CMDs	CBSD on roots	CBSD on roots	Yield t/ha
1	RBN018/028	0	1	0	1	42.64
2	RBN018/051	0	1	0	1	22.84
3	RBN018/020	0	1	0	1	32.62
4	RBN018/025	0	1	0	1	29.8
	Average yield	0	1	0	1	32.0

Irish potatoes

Multi location trials consisting of seven clones of selected genotypes in the pipeline for release:



Kir 18.036, Kin 18.240, Kin 18.003, Sang 18.003, Kin 18.029, Kin 18.061, Kin 18. 247 and Kirundo as local check were established in MT Trial in four different agro ecological zones of Rwanda as follows: Musanze, Burera (Rwerere), Karongi (Gakuta) and Kitabi in Nyamagabe. The dossier of three potato varieties (**KINIGI18.150, KINIGI18.190 and KINIGI18.253**) was completed and submitted of variety release during 2022-2023 FY.

Table 8: Average yield performance of tested new potato varieties across eight sites

Sites/ Clones	Kigega 18.029	Kinigi 18.150	Kinigi 18.190	Kinigi 18.253	Kirundo (Check)	Kirundo 18.058
Karenge	33.5	25.72	37.79	37.58	49.38	36.52
Kibeho	32.27	31.11	36.8	35.24	47.45	36.75
Kinigi	18.45	26.66	32.47	24.66	28.64	32.53
Mukura	36.38	37.41	34.84	35.2	26.58	21.4
Rurenge	23.07	20.9	47.94	30.52	25.37	29.04
Rusenge	29.29	25.82	41.5	50.82	45.14	34.66
Twumba	24.19	25.65	30.32	27.05	27.05	23.26
Uwinkingi	42.64	50.33	34.99	22.53	43.98	36.93
Average	29.97^b	30.45^b	37.08^a	32.95^{ab}	36.70^a	31.39^b

Demo plots for new high yielding released varieties under wide dissemination

170 demonstration plots (52 cassavas, 29 sweet potato and 89 potato demo plots) for new varieties established.



- 29 sweet potato demo plots were established in 8 districts, genotypes RwaSP17-103; RwaSP17- 255, RwaSP16-146 and RwaSP17-130 yielded high vs the local check wadada & Kwezikumwe. The yield estimated in T/ha on each variety in pre-released stage on 4 sites are RwaSP17-130: 16.2 T/ ha; RwaSP16-146: 17.8T/ha; RwaSP17-255: 18.4T/ha, Irene, and RwaSP-103: 22.9 T/ha. All the 4 pre-

released varieties are dual purpose varieties and are drought tolerant compared to their growing local varieties.

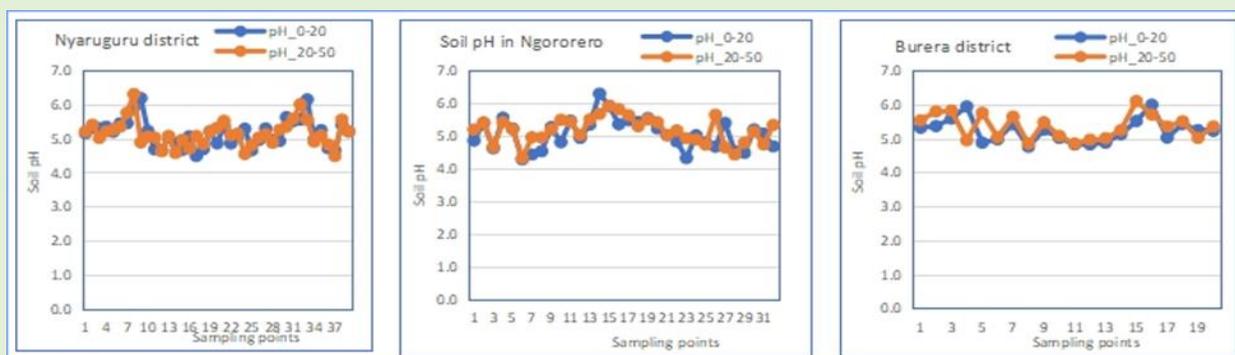
- 89 irish potato demonstration plots consist of 12 new released potato varieties: Kazeneza, Twihaze, Nkunganire, Izihirwe, Ndeze, Twigire, Seka, Cyerekezo, Ndamira, Gisubizo and Jyambere.
- 52 cassava demonstration plots were established during season A and season B. 13 progressist farmers were selected in different districts (Ruhango, Nyanza, Kamonyi, Bugesera and Kayonza districts)

1.1.5 Integrated soil fertility management

During the fiscal year 2022-2023 the Government of Rwanda, external competitive projects and grants have supported activities aiming at improving agriculture productivity through generation of technologies, innovations and management practices in the field of Integrated Soil Fertility Management. On the other hand, transfer of technologies to farmers has focused on soil erosion control practices through construction of radical and progressive terraces and the establishment of demonstration plots on the management of soil acidity problems.

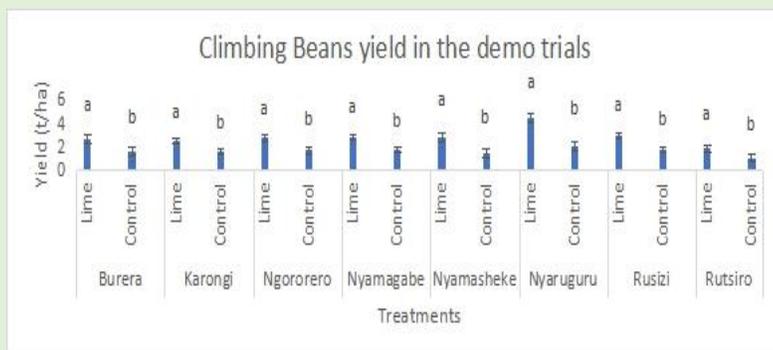
Soil acidity analysis

Research trials have been conducted on acidic soils and results from soil samples analysis collected in the districts of Nyaruguru, Ngororero, and Burera indicate that soils with pH<5.5 represents 86%, 83%, and 80% respectively. Nyarugu and Ngororero (pH=4.3-6.3) are more acidic than Burera (pH=4.8-6.0) but have low organic carbon (0.3-2.7 %) as compared to Burera (1.4-2.9%).



Soil acidity in the study areas of Nyaruguru, Ngororero and Burera

Response of crop yields to low, medium and high rates (1, 2.5 and 7t/ha) of lime revealed that no significant difference is observed between the three rates although better yield is recorded under medium and high rates. Crop yields have increased by 44-54%, 13-55% in Ngororero and Nyaruguru



for maize, 12-21%, 22-43%, 28-38% in Burera, Ngororero and Nyarugu for Irish potato respectively.

Results from demonstration plots on lime showed on average crop yield increase of 75% for Climbing bean,

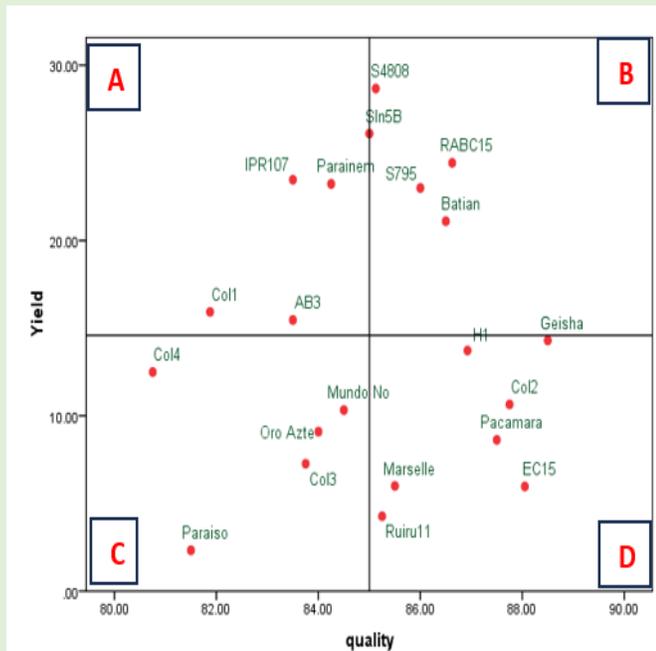
91.6% for Bush bean, 60.2% for Irish Potato, 52.0% for maize, and 90.5% for Soybean.

Soil sampling was conducted in some marshlands under rice cultivation covering 15750 ha located in Mukunguri: 1,550Ha, Kamiranzovu: 750Ha, Kirimbi: 750Ha, Rugeramigozi: 550Ha, Cyiri: 1,550Ha, Agasasa: 850Ha, Mirayi: 1,200Ha, Mwogo: 1,900Ha, Kibati: 200Ha, Nkunamo: 700Ha, Nyarubogo: 1,150Ha, Rusuli: 1,050Ha, Jenda: 3,050Ha and Kabatwa: 950Ha

The analysis focused on different soil chemical element levels including pH, Soil Acidity, N, P, K, Ca, Mg, EC, Na, OC and CEC.

1.1.6 Traditional export crops

Coffee varieties developed for future release Twenty-eight of coffee varieties are being evaluated in Rwanda for yield, quality and resistance to biotic and abiotic stresses in three different locations of Rwanda. Trial locations are characterized by Mid altitude and low rainfalls (Huye), Low altitude and raw rainfalls (Ngoma) and Mid altitude and high rainfalls (Nyamasheke)



The Multivariate biplot revealed good varieties for yield and quality attributes (S4808, SLN5B, RABC15, S795, Batian and Geisha). Other varieties such as Col 2, Pacamara, EC15, Marsellesa and Ruiru 11, showed relatively low yielding potential and high-quality attributes.

These findings are breakthroughs in varietal evaluation, introduction and adoption programs with regards to minimization of the cost of production, and maximization of the production in efforts to ensure the future of the supply chain with regard to market demand.

Characterization of tea clones for yield and quality perspectives

A study was conducted to compare the adaptability and stability seventeen tea clones to different growing areas of Rwanda namely Mata, Ntendezi, and Rulindo (ASSOPTHE and SARWATHE). Based on the mean yield, six clones were selected and are ready to be released these includes clone TRFK 54/40, TRFK 301/4, SFS 110, SFS 204, TRFK 303/577, TRI 475 and TRFK 301/4

The overall mean performance ranged from 1948 and 2185 kg /ha for clone SFS 204 and TRFK 54/40 respectively.

Regarding quality assessment, analysis also has indicated that the six clones present good cup quality. These clones illustrated narrow and broad adaptability potential within the 4 study locations. Clones appearing in the quadrant B of the bi plot and should be highly considered in the varietal promotion programs. They include TRFK 54, TRFK 301, TRFK.

Supporting the coffee seed sector

Multiplication and distribution of improved and adapted coffee varieties in each agroecological zones, deserves special attention to promote sustainable and commercial coffee production, processing and marketing towards coffee quality management.

In these regards, commercial and pre-commercial varieties were purified through the use of single nucleotide polymorphisms (SNPs) markers and type seed lost were established for these varieties



namely including RABC15, Batian, Geisha, Pacamara, Paraneima, Jackson x Ruiru, BM139X Harrar, BM139X Sln6, AB3 and H1 (Centro Americano).

On the other, 6 ha of genetically pure seed lots at Rubona, Ntendezi and Ngoma stations. During the course of Season B 2022/2023, 2,500kg of basic clean seeds were produced and distributed comprising of commercial

varieties (BM 139, Jackson 1257 and RABC 15). This amount of seeds will contribute to the production of at least 8,500,000 seedlings in the process for the nursery development and participation in coffee rejuvenation programme.

For the sake of the involvement of private seed multipliers in the seed supply chain in Rwanda, 34 agronomists from various private coffee companies and cooperatives were trained on quality seed production.

1.2 ANIMAL BASED RESEARCH ACTIVITIES AND EXTENSION

The animal resource development plays a big role in the economic development of the country. It contributes about 13% of the GDP and animal products contribute a lot in human nutrition. This fiscal year, several studies were conducted for animal nutrition, animal genetics improvement and animal health. The following researches were carried out as follow:

1.2.1 Ruminant species

Effect of hydroponic barley fodder crop feed supplemented to Dairy Cattle in Nyanza District

The aim of the study was to assess the effect of supplementing commercial concentrates feed to Napier grass and *Brachiaria brizantha* cv. Piata with *Desmodium distortum* on dry matter intake and milk production of crossbred dairy cows. Before the feeding trial was set up, chemical composition of feed resources was determined. *B. brizantha* cv. Piata and *D. distortum* had higher DM content while the latter legume had higher CP and low NDF (Table 9)

Table 9: Chemical composition of experimental diets (g/kg DM) of lactating cows

Forages	N	DM	Ash	CP	NDF	ADF	OM
B. brizantha	1	249.8±33.9 ^a	63.5±25.6 ^b	86.9±38.3 ^b	713.0±58.6 ^a	490.6±25.2 ^a	864.8±29.6 ^a
<i>cv. Piata</i>	6						
D. distortum	1	196.7±25.5 ^b	61.5±18.1 ^b	146.2±17.6 ^a	560.9±74.2 ^c	448.9±32.3 ^b	859.7±18.2 ^a
	6						
<i>Napier grass</i>	1	132.6±20.2 ^c	122.5±15.3 ^a	100.4±14.5 ^b	610.3±25.8 ^b	426.3±27.2 ^c	734.7±42.7 ^b
	6						

DM: Dry matter; CP: Crude protein; NDF: Neutral detergent fiber; ADF: Acid detergent fiber; OM: Organic matter; a,b,c: Means in the same column with the same uppercase letter are not significantly different at $p < 0.05$.

Parity and feed had an effect on milk yield and dry matter intake (DMI) in on-farms of Bugesera and Ngoma districts. The second parity had higher milk yield (7.2 L/day) for both feeds compared to other parities. *B. brizantha* cv. Piata +*D. distortum* had the highest milk yield (7.4 L/day) for the second lactation compared to the rest of parities. However, there was a significant difference ($P < 0.001$) between this feed and Napier grass +*D. distortum*. Nonetheless, the best DMI was observed in the second lactation when the cows were fed to *B. brizantha* cv. Piata +*D. distortum* and produced higher milk.

Table 10: Effect of parity and feed on dry matter intake and milk yield (Mean±SE) of Friesian-Ankole cows in Bugesera and Ngoma districts

Parity	Feed	N	Milk (L/day)	DMI (Kg/day)
1	B. brizantha cv.Piata+D.distortum	1,183	6.8±1.4 ^b	9.3±1.7 ^d
	Napier grass +D. distortum	637	6.9±1.3 ^b	11.1±1.9 ^c
2	B. brizantha cv.Piata +D.distortum	455	7.4±1.7 ^a	9.6±2.0 ^d
	Napier grass +D. distortum	546	7.0±1.3 ^{ab}	12.3±1.8 ^b
3	B. brizantha cv. Piata+D.distortum	637	6.7±1.4 ^b	9.4±1.7 ^d
	Napier grass +D. distortum	182	7.2±1.5 ^a	9.7±2.3 ^d
4	Napier grass +D. distortum	91	6.7±1.6 ^b	13.5±1.3 ^a

N= Number of observations; a,b,c,d= Means in the same column with the same uppercase letter are not significantly different at $p < 0.05$.

Furthermore, nitrogen (N) in faeces and in urine was determined in order to predict the N retention in crossbred and Ankole cattle (AA) using steers. The N excretion differed according either in faeces or in urine based on the steer genotype. For example, Ankole-Sahiwal (AS) had higher N in faeces while Ankole-Jersey (AJ) had higher N excretion in urine when concentrates were not used in the diet.

Evaluation of multiple ovulation and embryo transfer (MOET)

Bovine embryo transfer activities were carried out with the purpose of improving success rate of the technology in Rwanda, increase restocking with pure jersey breed genetics and improve skills of technicians on multiple ovulation and embryo transfer (MOET) technology. The 21 cows were selected and treated as potential embryo recipients. Recruited cows were treated with hormones for the oestrous heat induction and synchronization. Three types of hormones were used namely progesterone, prostaglandin, and gonadotropin. The recipient's preparation followed these main steps: Step 1 at day 0: Selection of best recipients (with a mature follicle) with the potential to develop a corpus luteum and to conceive. Step 2 at day 0: Insertion of a progesterone device and injection of gonadorelin. Step 3 at day 7: Removal of progesterone device and injection of prostaglandin. Step 4 at day 9: Heat detection and injection of another dose of gonadorelin. Step 6 at day 16: Embryo transfer. From the total 21 cows synchronized (prepared as embryo recipients), only 9 cows responded to all treatment and developed a good corpus luteum and thus received 9 frozen jersey embryos of which 8 cows conceived. The results shown that the current embryo transfer success rate is at 38%.

1.2.2 Monogastric species

Tagetes patula as pigment source in laying hen diets: Effect on yolk colour of eggs, Muhanga station

The objective of the study was to evaluate the effect of hen diet supplementation with dried Marigold (*Tagetes patula*) petals on the color of egg yolk. And was conducted in the poultry research farm at Rwanda Agriculture and Animal Resources Development Board (RAB), Muhanga district. The results shown that 20 g of Marigold (*Tagetes patula*) petals per Kg of feed seems to be the best level of inclusion in poultry diets for egg yolk pigmentation. At the level of 40 g kg⁻¹ marigold petals, there is a tendency of the egg yolk to become orange rather than yellow.

This type of egg yolk color is not preferred by consumers in Rwanda. It is concluded that the level of 20 g kg⁻¹ of marigold (*Tagetes patula*) petals was found to be sufficient for pigmentation for egg value-added product. It is inferred that incorporation of marigold as a wholesome feed additive for layer chickens under confinement has beneficial effects on enrichment of carotenoid pigments in egg yolk and improvement of color of egg yolk that is most preferred by consumers in Rwandan markets.

Effect of hydroponic wheat fodder supplementation on dry matter intake and growth performances of piglets

The present study aimed to evaluate the effect of hydroponic wheat (HPW) fodder as a supplement on the growth performance of weaned piglets. A 12-week randomized complete study was conducted using 30 weaned crossbreed (Pietrain × Landrace) piglets [60 ± 2 d of age, and body weight (BW) of 17.61 ± 1.63 kg (mean ± SD)]. Treatments were 0%, 15%, and 30% HPW on a dry matter (DM) basis, and diets were formulated to be isonitrogenous and isocaloric. Dry matter intake (DMI) was recorded daily while BW was measured

every two weeks. Average daily gain (ADG) and feed efficiency (Gain: feed) were calculated. The results showed that BW, ADG, DMI, and feed efficiency differed among treatments and were greater in piglets fed 0% HPW compared to the rest of the groups. The final average BW of piglets were 50.5; 43.9 and 39.1 kg for 0%, 15% and 30% HPW, respectively. The average daily gains were 0.66, 0.59 and 0.54 kg/day for 0%, 15% and 30% HPW, respectively. Dry matter intake was 1.88; 1.71 and 1.63 kg/d for 0%, 15% and 30% HPW respectively. Feed

efficiency (Gain: feed) was 0.27; 0.08 and 0.06 for piglets fed 0%, 15% and 30% HPW respectively. In the present study, piglets that were fed diets containing different levels of

HPW had lower growth performances compared to piglets fed the control diet. Hence, the inclusion of HPW in piglets' diets should be limited.

Assessment of quality limestone feed using multivariate statistical methods

The objectives of the study were to quantify the CaCO₃ content of lime as Ca source for pigs & poultry & determine the level of heavy

metals (Cd, Pb, Cu & K) level of lime as Ca source for pigs & poultry. The heavy metals data of limestone reported showed that the limestone collected and analysed were mostly below the maximum tolerable levels for cadmium, copper, and lead given in the NRC Mineral Tolerance of Animals book as well as those given in the AAFCO Official Publication. The limestone from Rusizi (Cocochauma Mashyuza and MPC Mashyuza), Waste Travagro grade 1 from Karongi and Travertin naturel from Ebenezer company could be used as limestone ingredient both in poultry and pig diets. Based on typical inclusion rates of limestone in the feed formulation, the expectation is that the



heavy metal levels in the final feed would be within an acceptable range and not cause a safety issue for poultry and pigs

heavy metal levels in the final feed would be within an acceptable range and not cause a safety issue for poultry and pigs

1.2.3 Aquaculture and Fisheries Program

Effect of feeding meal with earthworms as alternative protein source on the growth performance, survival rate, and feed conversion ratio of Nile Tilapia (*Oreochromis niloticus*)

The aim of this study was to examine the alternative protein source of replacing fish meal with earthworm meal in the diets of Nile Tilapia fish, *Oreochromis niloticus*. Fish meal protein was replaced by earthworm

meal at 25% (T25), 50% (T50), 75% (T75) and 100% (T100). The diets were isonitrogenous (35%CP) and fed to duplicate groups of Nile Tilapia at 8% and 6% of body weight at the first and the second month

respectively. Fish fed diets exceeding 50% replacement of fish meal with earthworm meal had depressed growth. The best Feed conversion ratio was observed for the fish fed

T50. It is concluded that fish meal can be substituted with earthworm meal up to 50% in the diet of Nile Tilapia without adverse effects on growth performance.

Effect of replacing dietary soybean meal with black soldier fly (*Hermetia illucens*) larvae meal on performance of Nile tilapia (*Oreochromis niloticus*)

A 84-day feeding trial was conducted at Kigembe Aquaculture farm to assess the effects of substitution of dietary soybean meal with black soldier fly (*Hermetia illucens*) larvae meal (BSFLM) on the growth performance, survival rate, and feed conversion ratio of Nile Tilapia (*Oreochromis niloticus*). Five test diets were formulated and substitution of soybean meal by BSFLM made at 0%, 25%, 50%, 75%, and 100%. The

results shown that soybean meal was replaced by 50%BSFLM. This is indicative that BSFLM can be considered as one of the best alternatives for partial or complete replacement of soybean meal in Nile tilapia diets that warrants the adoption of this animal protein source to fish farmers to sustainably produce cheap and nutritious fish feed capable of increasing yields and maximizing profit.

1.2.4 Apiculture and commercial insect

Development of high-quality queens through queen breeding technologies

A study was conducted in view of analyse the responses of local honeybees to Karl Jenter and Doolittle grafting queen-rearing methods in Rwanda. The research was conducted at the apiaries cooperative of Gatsibo, Kayonza, Musanze, Rutsiro, Burera, Nyamagabe and Rusizi in Rwanda. The results showed that the acceptance rates for Karl Jenter and Doolittle grafting queen rearing methods were 0% and 51.5%, respectively while the rates were 0% and 45% for hatched queen, respectively. It is concluded that using Doolittle grafting method is an excellent option to overcome the problem of identifying appropriate larvae for grafting under field condition.

CHAPTER 2: PRODUCTIVITY AND RESILIENCE

2.1 SUSTAINABLE LAND MANAGEMENT

Sustainable land management in agriculture involves a comprehensive approach to ensure the long-term productivity of agricultural land while minimizing environmental impacts. Key elements include soil conservation, efficient water management, crop rotation, agro-ecology, integrated pest management, conservation tillage, community engagement, technology adoption, education, and supportive policies. This holistic strategy aims to balance current agricultural needs with the preservation of land health for future generations, fostering resilient, productive, and environmentally friendly farming systems.

2.1.1 Land use consolidation

In Rwanda, average farm size is estimated to 0.4 hectares and 77.6 percent of agriculture households have less than 0.5 hectares (NISR, Agriculture Household Survey, 2020). The plots



are too small to produce a marketable surplus to invest in future production. Consequently, many smallholder farmers are left without means to increase production or to invest in development projects.

The Government of Rwanda (GoR) adopted the Land Use Consolidation (LUC) policy that aims at overcoming the effects of land fragmentation by increasing the scale of Agricultural

yields and stimulating a transformation to a competitive and market oriented Agricultural sector (MINAGRI, 2009).

Land Use Consolidation is one of the pillars of Crop Intensification Program (CIP) which currently undertakes a multi-prolonged approach for providing proximity extension services in terms of facilitating the availability and access of inputs (improved seeds and fertilizers) to farmer's /farmers' organizations, support of soil and water management, mechanization and irrigation technologies, and improvement of postharvest handling and storage mechanisms.

From the beginning of September 2007, the CIP program focused on eight priority crops namely maize, wheat, rice, Irish potato, beans, soybeans, banana and cassava and later on, Fruits and Vegetables were added to the list. Table 14 summarizes the achievement of land-use-consolidation for priority crops during 2022-2023 FY compared to targets. With regards to PSTA 4 targets of achieving consolidated land at 980,000 ha by 2022/23FY, the area under land-use-consolidation was achieved at 78.9% when considering the achievements of season 2023 A.

Table 11: Land use consolidation for priority crops during 2022/23

Crops	Targets (2022-2023 FY) in Ha		Achievements (Ha)	
	Season A	Season B	Season A	Season B
Maize	258,536	60,987.7	257,402	62,385.8
Beans	385,193	373,958.0	376,155	376,699.7
Cassava	66,987	35,449.5	61,855	34,732.6
Soybean	5,295	5,120.0	5,976	5,147.6
Rice	14,779	16,145.5	14269	16,273.0
Irish Potato	47,205	56,429.3	44,313	55,064.6
Wheat	6,770	38,238.0	5,841	37,644.3
Vegetables	8,673	6,254.7	7,509	4,996.5
Total	793,436	592,582.7	773,320	592,944

2.1.2 Soil conservation

More than 70 % of Rwanda’s farming is carried out on slopes ranging from 5 to 55 % of slope.



The combination of high rainfall levels and steep hillsides, leads to high soil erosion rates and soil plants nutrients depletion making land less productive. Various projects were initiated and implemented across the country to reduce soil erosion: This year, 3,235.7 ha of radical terraces and 22,579 ha of progressives’ terraces were developed.

Considering the NST1& PSTA4 targets, 138,579 ha of radical terraces achieved against 135,000 ha targeted while 1,008,855.4 ha of progressive terraces achieved versus 993,604 ha targeted by 2024.

2.1.3 Conservation agriculture

Since July 2022, the Ministry of Agriculture and Animal Resources in collaboration with MINALOC, RAB embarked on scaling up the practices of Conservation Agriculture in Rwanda. This was motivated by the success of conservation agriculture and its application through Pfumvudza in the southern African countries (especially Zimbabwe); the possibility for the practice to reduce soil erosion; increase productivity and efficiency among farmers.

In the season 2023A, the experimentation of conservation was successfully conducted. 120 experimental plots established in collaboration with 120 Champion Farmers (CF) and Sector Agriculture Officers (SAOs) in 120 Sectors selected (4 per district) across the country. The analysis of available data gathered from surveyed champion farmers

2.1.4 Agriculture Mechanization

Rwandan Government through the Ministry of Agriculture and Animal Resources (MINAGRI) initiated Agriculture mechanization to transform its agriculture from subsistence to market oriented as different farming operations were done traditionally. In collaboration with different

indicated a positive trend for grain yield (kg/ha) and % increase of grain yields as well as anthesis, plant height and biomass attributed to conservation agriculture compared to conventional agriculture.

Following its successful experimentation in the season 2023A & 2023B, it was decided to scale up the practices of conservation agriculture across all cells through the establishment 5000 demonstration plots for the seasons 2024A & 2024B for Maize, Beans, Irish Potato and Vegetables. Full scale up planned across all village is anticipated for 2024/2025. In this regards, 952 participants including 416 CFs; 416 SAOs; 90 technical staff from Agriculture unit at district level as well as RAB CIP FPs have been, through a practical training, equipped with capacities to successfully establish CA demonstration plots.

stakeholders, mechanized land increased from 70,740 ha in (2021/22) ha to 79,908 ha (2022/23) equivalent to 12.9% compared to the previous year. The achievement of mechanized farm operations reached 42% (2022/2023) against 50% the targeted by 2023/2024.

2.1.5. Irrigation Development

The irrigation master plan, 2020 identified more than 500,000 ha that can be irrigated in Rwanda. The Government through MINAGRI Strategic plan for Agriculture Transformation (PSTA4) and NST1 targets to achieve 102,284 Ha by 2024. Irrigation practices comprises of pressurized, surface

(gravity) irrigation, and small-scale irrigation technologies. For the fiscal year 2022/2023, the country has registered 71,585 ha under irrigation - including 37,273 ha of marshlands, 9,439 ha of hillsides and 24,873 ha of Small-Scale Irrigation Technology.

Hillside irrigation development

Mpanga hillside irrigation and watershed development

Mpanga hillside irrigation and watershed development covering 659ha completed. This project involves the watershed development, civil works construction for intake, supply and installation of electromechanical equipment and command area development. The serious issue at the site is the Power Voltage instability that affects the system to work at a very low capacity.



Mpanga irrigation scheme

The Tri-Phase line provided at the site seems weak and EDCL have to increase the power capacity at Mpanga scheme efficient and effective irrigation of targeted area (659ha).

Irrigation and watershed development for Mahama Lot 1 & lot 2

The development of Mahama irrigation schemes lot 1 and 2 started respectively in November and December 2021. Area under development is estimated to 1,220 Ha for Mahama 1 and 1,956 ha for Mahama 2. The general progress for Mahama I stands at 45 % and 28.5% for Mahama II. The main activities under implementation are the following:

- Construction of site establishment
- Construction of intake and supply and installation of electromechanical equipment's
- Supply and installation of irrigation infrastructure in the command area
- Watershed development

Gabiro Agri business hub development

Gabiro Agribusiness Hub Project (GAHP) is a commercial oriented farming project initiated through a joint venture between the Government of Rwanda with 90% Shares-Equity, and the



global leader of the irrigation sector Netafim Ltd with 10% shares. It aims to create a holistic commercial agricultural ecosystem by developing an advanced agricultural eco-system and modern value chain over a total of approximately 15,600 ha of arable land with advanced water infrastructure, cutting-edge irrigation systems, high-value agro-processing operations and other ag-tech

activities across the value chain.

Key achievements are the following:

- Bulk water supply completed- Reservoir 100%
- Intake & Primary pumping station stands at 96%
- Irrigation Canal of 21 km stands at 98% and 61 km of Internal roads development completed.
- Rural Resettlement: Houses construction for 192 households were completed as targeted for both sites of Shimwa Paul and Akanyange and the construction of 120 houses at Rwabiharamba site completed.
- MV power line Gabiro Substation - Karushuga (43km)- STAGE I completed.
- MV line connecting the canal (31km)- STAGE II stands at 98%
- Irrigation development of 5,600 ha in phase I arrive at final stage. The second phase of developing the remaining around 10,000 ha will follow.

2.1.6. Capacity building in irrigation related activities

To ensure the effective implementation of irrigation related activities different sessions were organized. 51,173 farmers were trained and 120 talks organized at Radio and TV. Farmers were supported with irrigation equipment and 6,513 Ha of marshlands were managed through HoReCo as service provider.

2.2 CROP PRODUCTION

2.2.1 Seeds production

In the context of strengthening seed production systems and exiting from the reliance on seed importation within the medium term (2018-2021) and sustain a steady supply of adequate in both quality and quantity seeds in the country, the government through the Ministry of Agriculture (MINAGRI) has created an enabling environment that mobilized the private sector actors to invest and engage in the activities of seed production and marketing. Through joint planning and effective collaboration with seed multipliers the planned targets were achieved in terms of basic and certified seeds production as summarized in table 12.

Table 12: Quantity of improved seeds produced

Crops	Basic Seeds (MT)		Certified Seeds (MT)	
	Targets	Achievements	Targets	Achievements
Maize	50	61.1	5,400	6,353.7
Soybean	50	31.4	550	718.3
Beans	90	45.6	700	761.5
Potato	2,500	3,355.7	45,500	45,990.1
Rice	18	27.1	650	816.6
Wheat	78	88.993	1300	1,464.8

Note that 115,384,500 cuttings of cassava were produced against 115,000,000 million cuttings targeted.

2.2.2 Use of fertilizers and improved seeds

Increasing agriculture production requires adoption of sustainable land management,



use of improved seed and fertilisers. This year farmers were mobilised to use agriculture inputs where the level of fertilisers uses achieved 70.3 kg/ha.

7,575.6 MT of improved seeds composed of

6,590.4MT of maize, 169.6 MT of Soybean and 815.6 MT of wheat were used by farmers.

On the side of inorganic fertilizers, a total of 78,011.6 MT of fertilizers composed of 20,851.5MT of UREA, 28,025.2 MT of DAP, 24,619.9MT of NPK and 4,515MT of Kcl+Blends were used by farmers. In addition, 18,361 MT of fertilizers were applied in tea and coffee plantations. This was made up of 3,860.4 MT applied in coffee and 14,500.9 MT in tea plantation for in season A & B. The total quantity of fertilizers applied in this fiscal for both food crops and cash crops is equivalent to 96,372.6 MT and 14,226.5 MT of lime was also applied.

2.2.3 Special Government interventions to leverage Agriculture inputs.

Due to the global supply chain challenges (increased oil/ gas prices, hiking fertilizer prices, that increase the cost of living and thus, threatening food security in the country), as well as the drought condition occurring in both A&B agriculture season of 2023 fiscal year, causing crop failure in different parts of country, especially in the Eastern and Southern Provinces. In response to these challenges, the Government of Rwanda has put in place special interventions to optimize crop production, therefore, ensuring the availability of adequate food in the country, thus, contributing to the reduction of the currently rising food inflation. The interventions made centred around 3 key pillars including: Intensification of crop production on identified potential sites through provision of DAP, UREA & NPK fertilizers to farmers on the sites with additional government subsidy

Support to farmers with seed of early-maturing & drought tolerant crops including beans, sweet potato vegetables and cassava; Provision of irrigation interventions to irrigable sites to mitigate drought damage. In order to deliver on the interventions, resources were mobilised both within the Ministry and national treasurer (MINECOFIN).



Hon Minister support farmers during the season launch

Under these interventions, a total of 4,372.1MT (DAP: 2,372.1MT; UREA: 2,000 MT of fertilizer for maize, beans and soybean were supplied to farmers to optimize the crop production. The distribution of DAP and UREA to farmers was free of charge. Seed or planting material for early maturing crops including beans, vegetables and sweet potato were distributed to farmers during

the interventions. The targets were the regions most affected by drought especially in the Eastern and Southern Provinces. A total of 85,137,312 sweet potato vines, 10,836,800 cassava cuttings, 2,166,000 number of vegetables seeds and 255.1MT of beans seeds have been distributed to farmer

2.2.4 Crop productivity and production system

A total of 1.36 million hectares were used for crops production in consideration of both seasons 2023A & B and about 2,174,483 farmers were mobilised through extension agents and registered in Smart Nkunganire System (SNS) to adopt good agriculture practices and use of required inputs to maximize the crop production in both seasons 2023A & B. This implies the use of improved seeds, fertilisers, lime, soil conservation practices, pest and diseases control, timely planting etc.

The NISR reports revealed that, with regard to the use of agricultural inputs, 35.9 percent of small-scale farmers (SSF) and 85.7 percent of Large-scale farmers (LSF) used improved seeds during season 2023 A while 78.2 percent of Large-scale farmers (LSF) and 19.6 percent of small scale farmers (SSF) used improved seeds during season 2023 B.

In season A of 2023, 87.9 percent of farmers applied organic fertilizer with 88.2 percent of small-scale farmers and 74.2 percent of large-scale farmers while in season B, 83.4 percent of farmers



used organic fertilizer, with 83.7 percent of small-scale farmers and 69.8 percent being large-scale farmers,

Additionally, in the same seasons, 59.6 percent of farmers applied inorganic fertilizer with 59 percent of small-scale farmers and 87.9 percent of large-scale farmers in A while in B, 51.6 percent of farmers applied inorganic fertilizer with

50.9 percent of small-scale farmers and 84.2 percent of large-scale farmers. Considering the application of pesticides, 33.2 percent of small scale farmers and 86.3 percent of large-scale farmers applied pesticides during season 2023 A while 28.6 percent of small scale farmers and 79.9 percent of large-scale farmers applied pesticides in season 23 B.

Regarding the practice of some of the Good Agricultural Practices (GAP), 10.3 percent of farmers practiced irrigation and 91.2 percent of farmers practiced anti-erosion activities. It has been realised that the level of adopting good agriculture practices for large scale farmers is very higher compared to the small scale farmers which contributed to the productivity increase for major crops.

The National average yield of Maize was 1.7 tons per hectare for SSF and 4.3 tons per hectare for large scale farmers, an average Irish potatoes yield of 8.2 per hectare for SSF and 12.2 tons per hectare for LSF, average rice yield of 2.3 for SSF and 4.0 tons per hectare for LSF. The yield of other crops; cassava, beans, wheat and soybean on LSF was respectively 13.5 t/ha, 0.6 t/ha, 1.2t/ha and 0.4 t/ha.

During season 2023 A while during season 2023 B, it was as follows: maize 4.1 and 1.2 t/ha for large and small scale farmers respectively, Irish potatoes 15.9 t/ha and 6.7 for large and small scale farmers respectively, Paddy rice 2.2 and 4.2 t/ha for small and large-scale farmers respectively, Beans 0.8 and 2,0 t/ha for small and large scale farmers respectively and 12.3 t/ha for Banana. Details of other crops are elaborated in the following tables.

The Tables 13 and 14 show the changes registered in term of area planted, crop production and average yield obtained in 2023 A & B compared to 2022A & B (NISR 2023 A & B reports)

Table 13: Crop production and average yield obtained in 2023 A compared to 2022A.

Crop	Cultivated Crop area (Ha)		Production (MT)			Av. Yield (MT/ha)	
	2023 A	2022 A	2023 A	2022 A	Increments %	2023 A	2022 A
Maize	226,982	219,683	390,879	348,907	12.0	1.7	1.6
Sorghum	38,979	37,469	46,296	45,016	2.8	1.2	1.2
Paddy rice	16,135	15,840	63,688	67,002	-4.9	4.0	4.2
Wheat	2,975	3,495	3,527	4,019	-12.3	1.2	1.1
Cassava	239,221	186,204	608,693	637,856	-4.6	13.5	14.0
Sweet potato	106,670	97,771	667,598	694,320	-3.8	7.4	7.1
Irish potato	55,613	56,442	454,355	486,075	-6.5	8.2	8.6
Taro & Yams	21,066	40,424	85,259	85,245	0.0	6.4	6.4
Cooking banana	96,262	96,434	555,973	545,588	1.9	14.2	13.7
Dessert banana	37,009	36,598	129,371	126,838	2.0	8.4	8.0
Banana for beer	122,019	126,472	534,065	519,904	2.7	10.1	9.8
Bean	312,279	362,439	197,212	235,818	-16.4	0.6	0.7
Pea	10,475	10,872	6,834	8,247	-17.1	0.7	0.8
Groundnut	11,191	15,144	4,687	5,445	-13.9	0.4	0.4
Soybean	29,778	26,996	11,771	13,741	-14.3	0.4	0.5
Vegetables	16,758	18,721	132,699	142,604	-6.9	8.1	7.8
Fruits	10,131	10,914	22,556	21,261	6.1	6.3	6.3

Table 14: Crop production and average yield obtained in 2023 B compared to 2022B

Crop	Cultivated Crop area (Ha)		Production (MT)			Yield (MT/ha)	
	2023 B	2022 B	2023 B	2022 B	Increments %	2023 B	2022 B
Maize	93,927	81,339	117,613	109,615	7.3	1.3	1.3
Sorghum	121,079	139,793	139,425	147,411	-5.4	1.2	1.1
Paddy rice	16,678	16,517	69,940	68,072	2.7	4.2	4.1
Wheat	10,375	8,482	13,129	9,858	33.2	1.3	1.2
Cassava	159,089	152,470	736,686	737,284	-0.1	14.8	15.2
Sweet potato	96,231	92,056	620,185	649,445	-4.5	7.5	7.5
Irish potato	48,210	52,858	326,677	331,016	-1.3	6.8	6.3
Taro & Yams	16,015	19,245	106,665	117,647	-9.3	7.8	7.4
Cooking banana	87,735	73,554	493,865	450,427	9.6	17.5	18.3

Crop	Cultivated Crop area (Ha)		Production (MT)			Yield (MT/ha)	
	2023 B	2022 B	2023 B	2022 B	Increments %	2023 B	2022 B
Dessert banana	54,000	37,511	149,266	145,753	2.4	11.4	11.6
Banana for beer	116,359	102,257	446,246	419,956	6.3	9.5	9.1
Beans	309,489	268,634	244,194	210,290	16.1	0.8	0.8
Pea	8,383	7,034	4,822	5,373	-10.3	0.6	0.8
Groundnut	17,745	19,545	8,509	10,172	-16.3	0.5	0.5
Soybean	40,235	37,251	17,288	19,530	-11.5	0.4	0.5
Vegetables	19,164	16,473	171,530	175,205	-2.1	9.6	11.1
Fruits	10,507	10,373	26,084	26,872	-2.9	5.6	6.4

2.2.5 Advisory services delivery

The advisory services were delivered through extension agents grouped under public institutions 19,425 ie, District Agriculture Officers/ staff, 60, District Agriculture Sector Inspectors (DASI, 30), District Cash Crop Officers 29, CIP Focal persons 32, Sector Agronomists 401, Farmer Promoters (FPs) 14,089, Farmer Field Schools facilitators (FFS) 1,982, Social & Economic Development Officer (SEDO) 2,087 and Agro-dealers (AG) 718

And 2,195, under private institutions: HORECO (67), YEAN Rwanda (45), Good Neighbours (11), YARA (16), Imbaraga Federation (16), Agriwin (66), RDO (46), One Acre Fund Tubura



(1,937) and Bridge 2 Rwanda (8). In total, we have about **21,620 extension Agents** that reach out to farmers during the implementation of both seasons 2023 A & B.

Through Twigire Muhinzi extension model, these front line extension agents combine efforts to train farmers on seasonal basis regarding all skills on Good Agricultural Practices (GAPs) and later on, farmers are

grouped in small groups from where they are also trained by these frontline extension agents under the supervision of RAB and District technical staff. During this year of 2022/2023, the number of frontline extension agents trained were 36,234 for both seasons A =18,481 & B =17,753 while farmers grouped in Twigiremuhinzi groups were 633,096 in season 2023 A and 758,603 in season

B. The number of farmers reached by advisory services and registered in Smart Nkunganire System (SNS) were 1,138,047 and 2,174,483 for A & B respectively. 34,345 demo plots were established by farmer’s promoters as indicated in table 15

Table 15: Demo plots established in Season 2023A & B

Crop	# of Demo plots in season 2023A	# of Demo plots season 2023B
Maize	8,00	6,441
Beans	4,600	7,590
Cassava	116	101
Soybean	1,344	995
Rice	200	245
Irish potatoes	1,030	1,420
Wheat	290	470
Vegetables	250	948
Banana	0	305
Total	15,832	18,513

2.3. ANIMAL RESOURCES PRODUCTION

The animal resources development plays a big role in the economic development of the country. Animal products such as milk, meat, and eggs are an important source of protein for human consumption. The major policy development and investment have been put in place to increase animal resources production by increasing the adoption of improved breeds; better feed and feeding; disease control and diagnostics.

2.3.1 Animal genetic improvement

Bovine artificial insemination

Bovine Artificial insemination (AI) is the best and safest means of cattle reproduction. With AI the dissemination of superior genetics is faster; access to the best bulls is ensured and reproductive diseases are prevented. Especially for Girinka beneficiaries and other smallholder cattle farmers, artificial insemination is the only

option to breed their cows since they cannot afford to keep a good bull for breeding. To ensure that farmers benefit from this technology, RAB monitors the bovine AI and the identification of AI-born calves across the country. In the 2022/2023 fiscal year, a total of 122,613 cows were inseminated and 58,651 calves were born on AI identified.

Swine artificial insemination (AI)

In Rwanda, artificial insemination in swine has been carried out since 2021. Farmers from 30



districts are served swine semen from six AI centers of Muhanga, Ntarama pig farm, Muyumbu pig breeding farm, CPPA Kisaro, VAF Gicumbi, and Heritage College farm of Rusizi district.

The semen doses produced from the beginning of AI is 21,247 and 19,860 sows were inseminated up to June 2023. Semen discarded is equal to 6% of the semen doses

produced.

Semen delivery through drones by Zipline

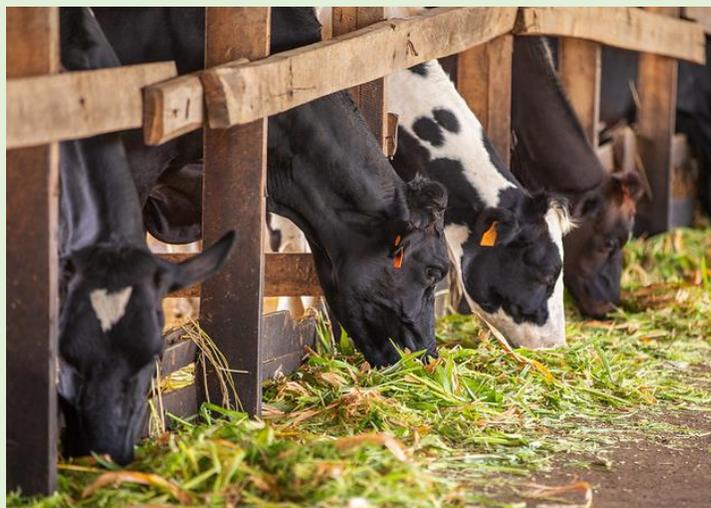
Pig semen is obtained from the Rwanda Agriculture Board (RAB) station in Muhanga as well as from private breeder farms such as the Muyumbu Pig Breeding Farm through the Kayonza semen depot and then distributed to farmers through registered veterinarians. The veterinarians place an order for semen to Zipline, an American company that operates delivery drones in Rwanda (and other parts of the world). Once the order is packed and dispatched, an SMS alert is sent from the drone to the receiver to prepare for collection. A package carries a maximum of three doses of semen.

2.3.2 Animal feeding

Forage planting

The target for forage planting was to plant 5,000 Hectares of improved forage grasses and legumes across the country. The ruminant program worked with its stakeholders including RDDP, sector animal resources officers, NGOs, individual farmers, and farmer cooperatives to achieve the target. The collaboration with districts enabled smooth implementation and achievement of the target. To achieve the target, we used a participation approach where all the stakeholders were involved.

Through the farmers' mobilizations, a big achievement was recorded, where land planted with improved forages was more than (>100%) of what was planned for 6,497 ha versus 5,000 ha planned. Large sizes of land planted forages were found in the districts covered by RDDP. However, other districts including Nyamasheke, Nyaruguru, Rulindo, Muhanga, Gakenke, Ngoma, and Rusizi had planted a significant number of acreages of improved forages.



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For forage seed production, at least 37.8 tonnes of Napier grass cuttings, *Brachiaria*, and *Panicum* splits have been produced. Also, 5.3 tonnes of seeds from different forage species (*Chloris gayana*, *Cenchrus ciliaris*, *Barley*, *Panicum coloratum*, *Panicum CIAT 155*, *Leuceana diversifolia*, *Desmodium distortum*, *Clitoria ternatea*, *Cratylia argentea*, *Canavalia brasiliensis*, *Lablab*, *Grass pea*, *Mucuna pruriens*) were produced.

Forage conservation

The biomass of fodder produced was mainly based on *Chloris gayana* and *Brachiaria* for haymaking. Around 54,653 bales of grass were produced during the fiscal year 2022-2023.



The trend for the hay production showed that hay production increases with the dry season and declines with the rainy season, except Kayonza which showed a high hay baling during the month of April. These hay bales are estimated to weigh

at least 907.2 tonnes of dry matter which can feed more than 120,965 cattle of 250 kg body weight in a day or could feed at least 1,344 cattle of 250 kg for a period of 90 days.

2.3.3 Veterinary services

The main activities of the veterinary services were articulated around 3 main activities:

Outbreak prevention and control: the focus was put on the vaccination of outbreak-prone diseases like Foot and Mouth Disease (FMD), Black Quarter (BQ), Lumpy Skin Disease (LSD), Rift Valley fever (RVF), Rabies, and Brucellosis. Animal disease control was carried out through mass vaccination of animals against economically important and zoonotic animal diseases. Awareness campaigns have been conducted to ensure timely vaccination against Foot and Mouth Disease, Lumpy Skin Disease, Black Quarter/Anthrax, Brucellosis, Rift Valley Fever and Rabies. A total of 261,184 cows were vaccinated against FMD; 1,331,633 cows against LSD; 759,728 cows were vaccinated against BQ; 1,267,970 cows were vaccinated against RVF, 81,638 cows vaccinated against brucellosis and 9,761 dogs were vaccinated against rabies. In addition, 1,116,928 goats and 284,509 sheep were vaccinated against RVF.

Laboratory testing:

The Central Veterinary Laboratory of Rubirizi and its 4 satellite laboratories (Rubavu, Huye, Ngoma, and Nyagatare) conducted many tests to support the treatment of sick animals or for disease surveillance aimed at determining the prevalence of animal diseases in the country .The



samples tested are 1,372 of RVF, 2,104 of FMD, 236 of ASF, 170 of Porcine Respiratory Reproductive Syndrome, 363 of Peste des Petits Ruminants, 465 of New castle disease, 82 of Avian Influenza, 89 of Infectious Bronchitis, 29 of Gumboro, 1,154 of Avian Salmonella, 273 of Mastitis, 5,601 of Brucellosis

Cattle, 7,587 Brucellosis Goat, 1,069 of Brucellosis Ovine and 4,093 of Brucellosis pig. The type

of test taken are PCR, ELISA, CMT, Bacteriology and among the samples tested, mastitis was the most common disease with 68.5% of positive cases.

Animal movements permit issuance: permits are delivered for import, export, transit, and internal movement of animals and animal products. The purpose was to track animal and animal products movements, which is important for disease control and surveillance, to ensure that animals are healthy and free from contagious diseases before they are transported to the country for preventing the spread of diseases among animal populations.

2.3.4. Girinka Program

Girinka Program is a home-grown solution that emerged from the 2006 as a pro-poor program to help poor families improve their welfare. Girinka program has been implemented in all 30 districts by the Government of Rwanda, Private sector, Civil Society Organizations, and Non-Government Institutions through giving cows to poor families in order to improve their socio-economic welfare. Girinka Program reduces poverty through dairy cattle farming and improves livelihoods through increased milk consumption and income generation. Another intended benefit was improving agricultural productivity through the use of manure as fertilizers. Since its inception in 2006 up to end June 2022, Girinka program has provided 451,612 including 24,036 cows distributed in this fiscal year.

2.3.5 Small stock distribution

Small stocks are among the priority value chains selected for strategic investment and promotion in the country. In order to increase the income of youth and vulnerable women groups in local



areas by creating jobs for unemployed youth and women the project entitled: “**Small Stock Project**” was developed and modernize the small animal industry in Rwanda. The project is fully aligned with the national priorities featured in the Strategic Plan for Agriculture Transformation Phase 4 (PSTA-4), the National Strategy for Transformation (NST-1), and the

National Agriculture Policy (NAP). In collaboration with different partners, 6,990 pigs, 103,402 chickens, 4,379 goats and 2,624 sheep were distributed to poor families.

2.3.6 Aquaculture and fisheries

The fish production outcomes from both aquaculture and capture fisheries in Rwanda, fish production comes from various sources, each contributing to the overall supply of fish for domestic consumption and economic activities.

During the 2022/23 FY, activities performed aiming at increasing fish production include fingerlings production, fish production from Aquaculture and Fisheries, extension Services, Monitoring Control, and Surveillance (MCS) activities, training initiatives, innovation and research, and licensing of new investors.

- **Fingerlings production:** hatcheries play a crucial role in fish production by producing fingerlings (young fish) that are then transferred to various aquaculture sites for growth. The fingerlings are distributed to farmers across the country, ensuring a steady supply of young



fish for cultivation. In this fiscal year, a production of 52,595,619 Million (Tilapia, carpe, and catfish) fingerlings was achieved.

Fish production from Aquaculture and Fisheries: the data from various fishers and farmers who are part of cooperatives and private companies result in a total

estimated production of 46, 495 MT of fish in this fiscal year.

- **Surveillance activities:** in collaboration with various stakeholders including the Police, District authorities and local community leaders, Illegal fishing equipment seized composed of 22,830 illegal fishing nets and 169 Fishing boats.

- **Licensing of new investors:** cage fish farming, as an emerging approach, can lead to transformative changes in the sector by offering efficient resource use, minimal environmental impact, and enhanced fish growth rates. These projects are expected to not only increase production but also drive innovation, create jobs, promote local economic development, and support sustainable aquaculture practices. This Fiscal Year, 10 new investors in cages fish farming, were facilitated and licensed.

Table 16: New investors in fish farming

Name of Company	District	Farming System	Number Of cages/Ponds	Projected Production
Nile Quality Feed	Rutsiro	Pond Farming	20 Cages	180 MT
Kivu choice Ltd	Nyamasheke	Cage Fish Farming Phase 2	204 Cages	20,000 MT
Ndego Farm Ltd	Kayonza	Tilapia Hatchery	2 ponds	
Kira Farm Ltd	Gatsibo	Tilapia hatchery	10 Cages	400 MT
Arabiata Agricultural Ltd	Rutsiro	Cage Fish Farming	10 Cages	35 MT
Pure Natural Fish Farming Ltd	Rutsiro	Cage Fish Farming		
Samaki Farm Ltd	Rutsiro	Cage Fish Farming	10 Cages	96 MT
Favo Aqua Fish Farm, Ltd	Karongi	Cage Fish Farming	16 Cages	120 MT
Kivu aquaculture Ltd	Rusizi	Cage Fish Farming	10 Cages	100 MT
Uwimana Jeannete	Rutsiro	Cage Fish Farming		

2.3.7 Apiculture and commercial insects

Apiculture and commercial insects' development in the form of micro-enterprises can provide income for poor agricultural populations with modest revenues from the production of bee products, beneficial insects, and cocoons, and then post-harvest processing to provide for the whole year.

The Apiculture and commercial insects program has been focusing on different activities (assessment of melliferous plantation in Nyamagabe and Nyamasheke, developing high-quality queens through queen-breeding technologies, evaluation of the effectiveness of pollen supplements and mite treatment in the elimination of varroa mites, evaluation the effectiveness of pollen supplements and mite treatment in the elimination of varroa mites, training of master beekeepers (targeting women and youths); artisans and professionals in advanced beekeeping, organize a proximity coaching around 4 beekeeping zones on new beekeeping technologies and

field trials on honeybee colonies multiplication to increase honey production, organize national exhibition during World Bee Day and planting melliferous trees) aiming at increasing honey production. The total honey production is estimated to 7,250 MT in this fiscal year.

2.3.8. Capacity building in animal production

Livestock Farm Field School

Livestock-Farmer Field School (L-FFS) groups have become a central approach for better service delivery. The L-FFS is done through L-FFS facilitators. The latter is responsible for training farmer facilitators. Currently, the sector accounts for 1,392 L-FFS (765 cattle facilitators; 205 poultry, 95 pigs, 114 feeds, 153 by IFAD PRISM and 60 Aquaculture and fisheries) across the country and 48 L-FFS Master trainers. The L-FFS facilitators contributed to the establishment of 2,784 L-FFS groups with 83,520 members.

Training

The 3,127 farmers were trained on forage production, harvesting, and conservation, as well as in general ruminant livestock husbandry. The training was conducted through different approaches including Livestock-Farmer Field School (L-FFS) and individual farmers.

The total of 20362 farmers (10950 livestock farmers were trained on Heifer Cornerstone, 4464 farmers trained entrepreneurship and enterprise development & 4948 farmers received technical training for Goat, Pig, Sheep and poultry management).

Training of master beekeepers (targeting women and youths); artisans and professionals in the coaching of beekeepers in Southern and Eastern province: proximity coaching of 150 master keepers around Akagera (Gatsibo, Kayonza and Nyagatare) and 152 around Nyungwe zone (Huye, Nyamagabe, Nyaruguru and Nyamasheke) participated in practical beekeeping training on value addition of bee products, bee colony multiplication, and honey harvesting.

Training on utilization of alternative sources of protein and energy

Six hundred (600) poultry and pig farming were trained on utilization of Black Soldier Fly (BSF), hydroponic fodder and feed

formulations. Those farmers were trained also on sweet potato vine to overcome the challenge of the source protein of such as

Soybean and fish meal. In addition, a collaborative effort involving various organizations, including TAAT, Wordfish, and Orora Wihaze, has provided training to two hatchery technicians from MINAGRI, RAB, RARICO and 22 Technician from 15 hatcheries in Rwanda on Standard Operating

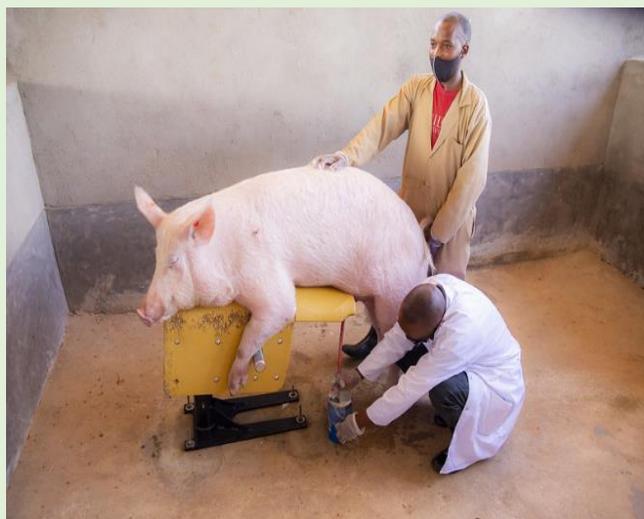
Climate smart innovations and practices

One of climate resilient technologies is the feed conservation which assists farmers in dry areas to cope with drought periods. Silage and hay making are the best adapted practices to cope with the dry spell seasons. During the year 2022/2023 which was marked with long dry spells, animal resources extension

Procedures (SOPs) for Tilapia hatchery operations. This initiative aim was to enhance the quality and efficiency of fingerling production in Rwandan hatcheries, ultimately advancing the aquaculture industry in the country.

workers were trained on how to conserve different feed resources. At least 32 extension workers both public and private from Nyagatare, Gatsibo, and Kayonza districts. In addition, 1500 rainwater harvesting facilities at household level were supplied and installed.

Training of technicians on cattle and pigs artificial insemination



Two hundred eighty-six (286) technicians have been trained on bovine artificial insemination technique and qualified as Inseminators. Also, existing AI technicians

have been given refresher courses on PD and best practices in bovine artificial insemination. To disseminate the technology of pig artificial insemination and their adoption, currently 985 technicians (public and private) were trained on importance of pig rearing, pig farming management, semen collection and processing, and technique of artificial insemination, hormones physiology and biosecurity.

2.3.9 Livestock infrastructure development

Construction of the National Animal Genetic Improvement Centre

The National Animal Genetic Improvement Centre (NAGIC) also known as Bull Station located



in Huye District/Songa construction

completed in the fiscal year 2022-2023

Construction of solar-powered boreholes.

The construction of boreholes is among the strategies to support farmers to cope with the lack of water for livestock in Eastern Province. Ten (10) solar-powered boreholes constructed at Kayonza in the fiscal year 2022-2023.

Construction of Pig slaughter slabs

The construction of ten (10) pig slaughter slabs to respond to the crucial lack of pig slaughtering facilities in Rwanda, is seen as a response to the major impediment to the development of the value chain. The construction completed at the end of the fiscal year 2022-23.



Pig slaughter slabs

Construction of proximity veterinary posts.

The construction of twenty (20) proximity veterinary posts to support farmers accessing proximity extension service delivery and the overall physical progress of construction works stands at 100%. The proximity veterinary posts constructed are located in Burera, Gicumbi, Musanze, Gakenke, Ruhango, Huye, Gisagara, Nyamagabe, Nyabihu, Karongi, Rutsito, Ngororero, Nyamasheke.

Construction/Rehabilitation of District livestock markets



The construction of District Livestock Markets has been considered as one of the priorities in meat industry development and the 15 new District Livestock Markets construction works with all required basic infrastructures for animal holding and meeting sanitary standards. The overall physical progress was at 90% at the end of the fiscal

year 2022-23 as planned. The livestock markets are located in Northern province at Burera, Gicumbi, Musanze, Gakenke, Rulindo; in Southern (Ruhango, Huye, Gisagara, Nyamagabe, Nyaruguru); in Western (Nyabihu, Karongi, Rutsiro, Ngororero and Nyamasheke).

Livestock population

The national livestock population comprises around 1.64 million cattle, 440,214 sheep, 1.99 million goats, 1.1 million pigs, and around 6.4 million laying hens, broilers, and local chickens.

Table 17: Trend of Animal population by type (2013-2023)

Category	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023
Cattle	1,135,141	1,138,799	1,165,835	1,349,792	1,214,244	1,166,187	1,293,768	1,371,828	1,449,888	1,575,703	1,644,692
Goats	2,672,751	2,657,275	2,632,277	2,670,382	2,705,780	2,742,376	2,731,795	2,787,898	2,844,001	2,348,895	1,995,636
Sheep	807,392	829,638	630,860	716,309	637,068	664,703	601,836	541,416	601,836	501,548	440,214
Pigs	989,316	1,311,250	1,014,629	1,492,506	1,684,709	1,716,438	1,330,461	1,385,769	1,441,077	1,498,721	1,123,075
Rabbits	993,685	1,105,750	1,203,485	1,354,703	1,387,669	1,347,860	1,264,734	688,788	801,490	817,519	656,153
Poultry	4,687,984	4,802,764	4,916,837	4,837,794	5,238,497	5,272,725	5,442,152	5,306,254	5,442,152	5,496,574	6,047,215

Animal products

Animal products are an extremely important component of the agri-food sector in Rwanda. They are a source of income for a large part of the population. They provide high-value-added proteins in the national diet, contribute to food security, and could be a major source of foreign currency. The quantities of animal products are in increasing trend thanks to improving pasture fodder,

strengthening animal health services, improving animal genetics, and the use of appropriate feeding technologies.

In the 2022/23 FY, the national livestock population produced 197,778 MT of meat, 1,061,301 MT of milk, 17,344 MT of eggs, 46,495 MT of fish, and 7,250 MT of honey.

Table 18: Trend of animal products 2011-2023 in MT

Product	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023
Milk	503,130	648,395	674,330	700,267	756,288	816,791	847,178	864,252	891,326	999,976	1,061,301
Meat	76830	91,087	94,730	103,281	117,294	152,029	162,470	168,687	174,904	185,989	197,778
Fish	17,566	24,550	24,795	25,450	26,732	28,705	31,465	32,756	36,047	43,560	46,495
Eggs	6,324	6,757	6,892	6,973	7,347	7,475	7,936	7,972	8,272	8,665	17,344
Honey	3,785	4,286	4,371	4,585	4,738	5,105	5,200	5,500	5,800	6,135	7,250
Hides & skin	3,814	5,207	5,259	5,305	5,506	6,781	6,567	6,305	6,305	6,087	6,027

Table 19: Consumption per person per year vis a vis need

	2018	2019	2020	2021	2022	2023
<i>Milk lt/pers/year</i>	68	69,4	72.02	73.9	75.3	78.7
<i>Meat Kg/pers/year</i>	12,7	13	14.06	14.5	13.9	14.2
<i>Eggs kg /pers/year</i>	0.63	0.63	0.66	0.7	1.3	1.4
<i>Fish Kg/pers/year</i>	2.62	2.56	2.73	3	3.9	4.0
<i>oney Kg/pers/year</i>	0.47	0.53	0.46	0.5	0.5	0.5



CHAPTER 3. INCLUSIVE MARKETS AND VALUE ADDITION

3.1 AGRICULTURE EXPORTS

Agricultural export is considered as an engine that contributes to the growth of the overall economy. It plays a strategic role in improving Rwanda's balance of trade and generate income



for producers, processors and other actors in the agricultural sector. In Fiscal year 2022-23, the agriculture exports generated USD \$ 857.2 Million against US \$640.9 Million recorded in 2021/2022 that represents an increase of 33.7%.

Agricultural exports are categorized into two namely; Traditional and non-tradition/emerging commodities exports. Under traditional exports, there is Coffee, Tea, and Pyrethrum value chains while for emerging/non-traditional commodities exports there are fruits, vegetable, flowers, livestock products, cereals and grains, hides and skins among other diversified agricultural export products.

3.1.1. Coffee performance

3.1.1.1 Coffee production and exports

The total of 19,673 MT coffee was produced and 20,064.9 MT exported in fiscal year 2022/23 and



has generated USD \$115.9 Million. Farmers were mobilized for GAP in coffee production through pruning, pest control and fertilizers application. As a result, coffee productivity stands at 2.6 Kg/tree and 71,958 MT of coffee cherries were received by CWSs. The area under coffee plantation expanded to 42,239ha and 11,979,144 seedlings were prepared and planted. A quantity of 3,860.4 MT of NPK of

fertilizers were supplied to farmers to improve productivity and 17,093 liters of pesticides and 245 liters of fungicide were applied to control coffee pests.

3.1.2. Tea performance

The development of tea plantation across the country has continued yielding increase in made tea production from 30,560 MT in FY 2017/18 to 40,874 MT in FY 2022/23. The increase in made tea production is primarily due to higher output from the new Cyato and Rugabano plantations. Additionally, efforts in training tea workers, increased fertilizer usage, and favorable climate contributed a lot. By the end of the fiscal year 2022/2023, a total of 31,498.6 hectares had been planted with tea in which 24,681.9 ha are productive. This included 1,775 hectares of newly planted areas in various locations such as Pfunda, Rutsiro, Mata, Ekaterra, Mulindi, Sorwathe, Gatare, Shagasha, Nyabihu, Rugabano and Gisovu.

Table 20: Tea performance in FY 2022-2023

Commodities	FY2022-23 Target	FY2022-23 Achievements	Percentage achievement (%)
Production (MT)	37,936	40,874.3	107.7%
Exports (MT)	36,383	39,008.9	107%
Value of exports (Million USD)	113	107.7	95.3%
Average price (Kg/USD)	3.1	2.7	87%



To reinforce tea expansion activities, 28.9MT of tubing(s) and 19.8 MT of sheeting(s) were distributed to tea cooperatives and 7,380,000 tea seedlings have been prepared and planted by COOPTHEGA, SORWATHE, KATECOGRO, COOPTHEVIGI, RUTEGROC. 5 Houses (8In1) were constructed in Rugabano IDP Model

Village project for phase III. 7,500 tea pluckers were trained in plucking skills and 14,500.9 MT of mineral fertilizer was applied in tea plantation by tea factories and cooperatives. The tea productivity increase at 6.8MT/ha

Capacity Building in Tea Sector

The skills of tea pluckers, mainly women, have been improved and the quality of tea leaves plucked for processing also improved, the quantity of damaged tea leaves reduced. Thus, woman plucker's income from tea plucking works has increased due to the skills gained and an increase in the amount of tea leaves picked. During FY 2022/2023, a total of 7,500 tea pluckers were trained & entered in a school of professional plucking as well as studying how to pluck tea in a professional way. Among these including 73% of women and 21% of men. 23 tea makers from 18 tea factories and 4 value-addition companies were trained. Also, training was provided to 25 pack house managers and quality control staff.

The trained farmers belong the different factories and their cooperatives; these are: Gisakura, Gatara, Cyato, Copthe (Mwanga, Cothecyaka, Cothega), Cothenk, Cothemuki, Cothenya, Scon, Nshili Kivu, Muganza Kivu, Ekaterra, Mata, Rutsiro, Rubaya, Pfunda, Karongi, Gisovu, Rugabano, Nyabihu, Shagasha, Mulindi, Kitabi, Mushubi, Sorwathe.

3.1.3 Horticulture performance

Horticulture is considered as one of the important sectors in Rwanda, with high potential to switch from low input /low output staple crops to high-value crops. The sub-sector presents high potential to respond to the growing global, regional, and local markets and as well as closing dietary gaps in Rwandan households.



The data from NISR report (SAS 2023AB) indicates that fruits and vegetables were planted on 56,560 Ha and production obtained was 352,869 MT while flowers planted on 110 Ha . The horticulture exports generated 58.1 USD Million from 51,689 MT of vegetables, 21,953 MT and 845 MT of Flowers. Among horticulture exported commodities

included Flowers, Fresh beans, Chili/Pepper, Fresh Peas, Macadamia, Avocadoes, Passion fruits,

Snow peas, Tomatoes, Cabbage, Carrots, Cucumber, Eggplants, Mushrooms, Broccoli, and Onions among others.

Table 21: Horticulture achievements

Commodities	Commodities	FY2022-23 Achievements
Vegetables	Exports (MT)	51,689
	Value of exports (USD Million)	34.5
	Average price (USD/ Kg)	0.66
Fruits	Exports (MT)	21,953
	Value of exports (USD)	19
	Average price (USD/Kg)	0.86
Flowers	Exports (MT)	845
	Value of exports (USD)	4.5
	Average price (USD/Kg)	5.36
	Total value USD Million	58.1

Horticulture Destination Countries

Rwanda has successfully expanded its horticultural exports, encompassing vegetables, fruits, and flowers, to various regions worldwide, including Africa, Europe, America, Asia, and Australia. Notably, the majority of vegetable exports were directed towards the Democratic Republic of Congo (67%), the United Kingdom (13%), and France (4%), among other destinations. Meanwhile, fruit exports found significant markets in the Democratic Republic of Congo, the United Arab Emirates, and Vietnam. In the case of flower exports, Rwanda primarily shipped flowers to the Netherlands, the United Kingdom, and North Korea.

Floriculture Production

Roses Production

In the fiscal year, Bella Flowers operated a total of 47 greenhouses on their farm, organized into different phases. Specifically, there were 18 greenhouses in Phase 1, 16 greenhouses in Phase 2, 5 greenhouses constructed during Phase 3, and 8 greenhouses in Phase 4, covering a combined area of 55 hectares. Additionally, in covering area not planted in all phases, an extension was made of 0.6 Ha in phase1, 0.35 Ha in phase2 and phase3 each respectively. The extended area measured was 1.3 hectares, as indicated in the table below. To date, there are seven dam sheets, with four of them equipped with dam liners. Additionally, the pack house has been operating efficiently, encompassing all processes, including quality intake, intake cold-room, sizing tables, sorting

tables, batching tables, quality control, packing cold rooms, and well-maintained refrigerated trucks.

Summer Flower Production

Bloom Hills is the proprietor of the flower farm, which holds a lease on 10 hectares within the



Nyacyonga farm, encompassing a total expanse of 28 hectares. At the farm, there 7 hectares dedicated to the presence of 7 greenhouses, while ongoing efforts were directed towards the development of roads, an irrigation reservoir, and various other operational facets. 6.5 hectares are actively in production, focusing on cultivating the gentian variety.

Rosemary Production

The rosemary plant exhibits robustness, able to flourish in a wide range of well-draining soils, but it truly thrives when specific climate and soil conditions are met. The cultivation of rosemary for commercial purposes involves a series of critical tasks. These include planting, irrigation, fertilization, weed control, and harvesting, all of which significantly impact the ultimate yield. In the fiscal year 2022-2023, a total of 81.89 hectares of rosemary were cultivated in the regions of Rulindo, Rwamagana, Bugesera, and Kirehe.

Vegetables Production

In the current fiscal year, chili peppers were cultivated across a combined area of 1,526 hectares, sourced from various centralized and dispersed farms. Additionally, French beans were grown on 258.5 hectares in Nyagatare, Muhanga, Kirehe, and Kamonyi districts. The primary exporting companies for these crops were Garden Fresh Ltd and Proxi Fresh Ltd

Capacity Building and extension services in horticulture sector

During the fiscal year 2022/23, Tear Fund, in collaboration with other partners, facilitated the training of 5,881 novice vegetable farmers in the designated project areas of Bugesera, Kayonza, Rwamagana, and Gasabo. These farmers have enthusiastically adopted advanced agricultural

methods, with a particular emphasis on improving their skills in good agricultural practices, post-harvest techniques, and quality standards to align with market requirements.

During the fiscal year, pest and disease surveillance activities were carried out twice, first in December 2022 and then in May 2023. During the December surveillance, the focus was solely on Chilli crops. However, in May 2023, the surveillance expanded to cover Chilli, Avocado, and Passion fruit. Notably, the Avocado crops exhibited significant issues, including the presence of FCM, Stink Bug, Algal Leaf Spot, and Anthracnose. In the case of Chilli, the observed problems included FCM, Viruses, Cercospora leaf spot, Trips, and Aphids. Lastly, in Mango crops, the primary concerns were the Mango Mealy Bug, Anthracnose, and Fruit Flies.



Most of interventions were carried out across 9 different crops. These interventions were distributed as follows: 23 in avocado orchards, 18 in mango orchards, 10 in chili farms, 5 in citrus orchards, 5 in tomato farms, 2 in passion fruit plantations, 1 in a flower garden, 1 in a cabbage farm, and 1 in a macadamia orchard. The primary issue identified in avocado orchards was the presence of stink

bugs and fruit spotting bugs. In mango and citrus orchards, the culprits were mealybugs and fruit flies. Chili farms faced challenges from FCM, Thrips, and Anthracnose. Tomato farms were grappling with Tutta absoluta, while thrips were observed in passion fruit plantations. Different pest control products (insecticides, fungicides, and traps) have been distributed to farmers to assist them in management of pests and diseases.

115 stakeholders were supported with pesticides and traps to prevent and monitor pests and diseases. The assistance included the distribution of the following items: 100 liters of Lambda-cyhalothrin and 44 liters of Abamectin as insecticides, 1,392 pieces of False Codling Moth traps, 53 kilograms of copper hydroxide and 38 kilograms of Sulphur as fungicides and 310 pieces of Fly catchers for the purpose of controlling and monitoring fruit flies.

3.1.4 Diversification & products development performance

Numerous initiatives were undertaken to enhance diversification and the performance of the product development sector. These efforts encompassed a range of activities, including bolstering production and post-harvest infrastructure to ensure a consistent supply of high-quality products for export. Additionally, we facilitated certification and promotional campaigns, provided assistance in establishing pyrethrum nurseries, explores new market opportunities, maintained both existing and newly established mulberry plantations, and produced parental cocoons, among various other endeavors.

3.1.4.1 Sericulture Performance

In the fiscal year 2022/23, a total of 798.5 boxes of silkworms were successfully raised by both farmers and Cocoons Production Centres (CPCs), resulting in a cocoon production of 13.2 metric tons (MT). This represents a 14.29% decrease in cocoon production compared to the previous fiscal year (2021/22). Several factors contributed to this decline, including farmers' reluctance to rear silkworms due to a lack of private sector investment in the industry, dissatisfaction

with the low cocoon prices they received, and irregular rainfall and inundations in the Western zone, leading to drought and heavy rains during the critical production months. These weather fluctuations resulted in reduced feeding frequency, lower nutritional quality of mulberry leaves, and a decrease in the overall mulberry tree population, all of which contributed to the reduction in cocoon production.

3.1.4.2 Pyrethrum production and export

During FY2022-2023, the goal was to cultivate 50 hectares of pyrethrum seedlings in four districts. These seedlings were intended to support farmers in enhancing pyrethrum productivity by utilizing superior planting materials. A total of 83.3 hectares of pyrethrum nurseries had been established, with 42.8 hectares funded through earmarked funds and 40.5 hectares prepared with the assistance of H. Sopyrwa for individual farmers. In the fiscal year 2022/23, the target for dry flower production was set at 1,300 MT. Remarkably, the H. Sopyrwa factory exceeded this annual goal by receiving a total of 1,518 MT of dry flowers, surpassing the target by an impressive 116.7%.

This outstanding performance can be attributed to favourable weather conditions throughout the season and the dedicated efforts put into crop management.

Comparing FY2022/2023 with the previous fiscal years, pyrethrum exports and revenue generated were 25 MT and USD 5.49 Million respectively. Revenue generated from exports during FY2022/23; decreased by 13.8% compared to the previous fiscal year 2021/22 while the exported volume increased by 9.6%.

Extension and capacity building in pyrethrum sector

The training was organized to build the capacity of pyrethrum farmers, to upgrade their knowledge in pyrethrum farming and to provide deeper understanding of the plants relating to production, harvesting and postharvest handling. The training covered the topics such as Pyrethrum seedlings preparation, Land preparation, Crop management, seeds preparation, Pests and diseases control, By the end June 2022, a total of 369 pyrethrum farmers in districts of Nyabihu, Musanze, and Burera were trained.

3.1.5. Market Linkages for Agricultural Exports

Throughout the fiscal year 2022/23, multiple initiatives were launched to boost the competitiveness of Rwandan agricultural exports on the global stage and to raise awareness and



communication about the distinctive qualities of Rwandan agricultural products in both local and international markets. These efforts included a range of actions, such as establishing new business locations, broadening the selection of exportable products, exploring previously untapped export opportunities, identifying favorable openings in

export markets, and evaluating potential opportunities and challenges in various product categories.

Participation in trade missions and international trade fairs played a pivotal role in enhancing the visibility of Rwandan agricultural products globally and regionally. These events facilitated

productive business-to-business meetings and networking opportunities, ultimately leading to the creation of new business prospects. Rwanda actively took part in numerous trade missions and exhibitions held in various countries, including Singapore, France, Egypt, the USA, the Netherlands, China, Ghana, Japan, the UAE, Spain, Qatar, Saudi Arabia, Dubai, Kenya, Sweden, and more. Further details about each exhibition and trade mission are available below.

Salon International de l'agriculture

The event took place in Paris, France, from February 25th to March 5th, 2023. It was notable for its diverse range of agricultural products, livestock, high-quality Earth's produce, and distinctive culinary offerings. This marked Rwanda's second participation in the annual trade show, with 12 companies representing sectors such as coffee, tea, honey, and fresh produce. Rwanda's involvement in the SIA was a collaborative effort, organized and sponsored by RDB, NAEB, the Embassy of France in Kigali, and the Embassy of Rwanda in Paris.

In partnership with the Rwandan Embassy in France, we are committed to supporting our companies and nurturing the connections established during the SIA. Our objective was to introduce "Made in Rwanda" products to medium-sized and specialized stores, including Organic.



Honey stores like Naturalia and Biocorp. We place a strong emphasis on enhancing the standards and certification of Rwandan products, streamlining the certification process, and engaging French NGOs that assist producers in obtaining certifications. Our plans are to significantly expand our booth to accommodate all activities, including B2C and B2B meetings, as well as providing ample storage for a larger quantity of products.

Fruit Logistica

The 29th edition of Fruit Logistica, a prominent global trade show for fresh produce, was held in February 2023 at Messe Berlin, Germany. This event showcased the latest technologies, products, and services throughout the entire global supply chain within the fresh produce industry. It covered various sectors, including fresh produce, nuts, dried fruits, product packaging, labeling, logistics, transportation, and goods handling and storage. Nine companies, including Bahage Foods, Souk Farms, Garden Fresh, Tropi Wanda, S&I Fresh, Afri Food Ltd, Selly Faith, Agronova, and High & Lum, participated.

Participation in these events has expanded the horizons for Rwandan horticulture exporters like Virunga, Bahage Foods, Afrifoods, and Exodeen Ltd, enabling them to secure robust export agreements with importers in Germany, Belgium, France, and other countries. Furthermore, the European fresh fruit and vegetable sector has seen an increase in potential clients in recent years. Importantly, prominent buyers who regularly supply fresh produce to European supermarkets attended these events, leading to heightened interest in Rwandan horticultural products.

Amsterdam Coffee Festival

Rwanda's coffee export companies made their fourth appearance at the Amsterdam Coffee Festival in the Netherlands, themed "Exploring Coffee Excellence and Cultivating Global Connections."

The event showcased the diverse global coffee industry, attracting over 8,000 attendees and fostering networking and collaboration among coffee professionals worldwide.



The NAEB and the Istituto per la Cooperazione Universitaria Onlus (ICU), with the support of the Embassy of the Republic of Rwanda in the Netherlands, meticulously coordinated Rwanda's participation in the festival. Eight Rwandan coffee businesses, including Baho Coffee, Kanya Coffee, Kivu Belt

Coffee, Mountain Coffee, Mubuga Coffee, Nova Coffee, Rwashoscco, and Sake Coffee, received generous assistance to showcase the exceptional quality of Rwandan coffee and explore new market opportunities.

SWEACC and IFTEX 2023 exhibition and conference

Three entrepreneurs representing horticulture export companies, SOUK, Effective M&N Ltd, and Proxfresh Ltd, actively participated in an agricultural-focused event called SWEACC, which was hosted by East African embassies in Nordic countries. The primary goal of this event was to establish connections between fresh produce exporters and buyers in the Nordic region. It turned out to be a great success as it allowed them to engage with key buyers and establish valuable connections within the fresh produce hub in the Netherlands.

Rwandan exporters had the opportunity to explore high-quality flower varieties not yet cultivated in their region, generating significant interest in the current market and commanding higher prices. Rwandan flower exporters also engaged with fellow growers of summer flowers from various African countries such as Kenya, Zimbabwe, Ethiopia, Uganda, Tanzania, and Nigeria, all of which were cultivating emerging flower varieties at IFTEX. After the exhibition concluded, exporters also had the chance to visit Precise Flowers and Maaskante Flowers, two greenhouse-



based summer flower farms in the Nairobi area.

Some of other exhibitions where various exporters received support to participate included SCAA Portland in North America, where 11 exporters had the opportunity to take part. Additionally, support was extended to Rwandan export companies attending events such as World

of Coffee in Greece, AgriAfrica Expo, World coffee producer's forum, African fine coffee association and Agrishow at Mulindi show ground, which focused on enhancing agricultural resilience through modern technologies. Four honey exporters received support for their participation in the 47th Apimondia International Congress in Turkey. Furthermore, nine Rwandan companies were supported to attend a coffee cupping event in the Netherlands. These initiatives were complemented by the Ghana Trade Mission, Made in Rwanda Expo in Stockholm, China International Import Export, Specialty Coffee and Exhibition SCAJ 2022, North American Tea Conference and Exhibition, Saudi Arabia Trade Mission and Exhibition, The Fruit Attraction Trade Fair, and IFTF.

3.2. DAIRY VALUE CHAIN

3.2.1 Enhancing the utilization capacity of milk collection centers

The dairy value chain has made significant progress in the last decades. This is attributable to important efforts deployed by the government to strengthen the livestock sector including but not limited to:

- a) the Distribution of cows to poor people under the Girinka program.
- b) strong support of genetic improvement through artificial insemination.
- c) Rigorous program of disease control through regular animal vaccination campaigns;



- d) Government projects and development partners (ex. RDDP, HPI, etc...) that are supporting the dairy value chain development.

The Government has also encouraged the construction of milk collection centres from GoR funds or the Private sector, in order to enhance the collection of the produced milk. Currently, the country counts 135 Milk Collection Centres with a total installed cooling capacity of 604,714 liters per day.

During the fiscal year 2022-23, a total of 91,791,675 liters of milk have been channelled through MCCs. The quantity of milk collected through MCCs increased from 85,223,665 litres in 2021/22 to 91,791,675 liters in 2022/23 representing an MCC utilization rate of 53,9%.

3.2.2 Milk supply to dairy processing plants

In order to enhance the supply of milk to dairy processors, the following activities were carried out. Sensitization of farmers and MCCs on the observance of the Ministerial Order related to the collection, transportation, and commercialization of milk. In partnership with local leaders, strategies to fight the commercialization of milk through informal channels. A tool to trace the origin of the commercialized milk (and consequently identify whether it was channelled through MCC or not) was designed for the purpose.

Working closely with MCCs in different milk shades in order to solve issues related to milk collection: MCCs were regularly visited by technicians from RAB and RICA and provided with technical advice to enhance the collection of milk.



Strengthening the structures of different actors of the dairy value chain: In partnership with Rwanda National Dairy Platform, milk transporters were organized into cooperatives as a strategy to fight against the transportation and commercialization of milk through informal channels.

Milk consumption campaigns were conducted to enhance the consumption of milk in communities. Additionally, MoUs were signed with different dairy processors for the establishment of milk zones to enhance the availability of milk to communities at an affordable price.

During the fiscal year 2022-23, a total of 81,200,298 Liters of milk have been supplied to milk processing plants.

3.3. POST HARVEST MANAGEMENT

Reducing post-harvest losses and improving the quality of produce is critical to ensuring the country's food security, increasing rural incomes and contributing to Rwanda's overall economic development. In 2022-23, post-harvest losses and product quality were highly variable due to weather conditions at harvest, drying techniques, and the quality of storage infrastructure for cereals, pulses and vegetables. In the light of climate change and the cropping systems promoted under crop Intensification program, postharvest handling is now taking place at wetter times of the year to secure the available harvest.

Various efforts were deployed: (i) construction of postharvest infrastructure (ii) Organization of the technical trainings on good postharvest practices (iii) distribution of equipment for post-harvest and purchase mobile dryers.

During the 2022/23 FY, four (4) drying ground and 7 storages were constructed, 30 maize shelters constructed and 13 cold rooms were constructed in collaboration with SAIP and AEE. The extension works of Nyagatare silo with 10,000 MT are ongoing where foundation works completed



Extension of Nyagatare Silo

Currently the country counts:

- 1495 drying infrastructure comprising 924 maize drying shelters and 571 rice drying grounds constructed
- 530 storages whose total capacity estimated at 318,025 MT
- 45 mobile drying machines
- 90 cold rooms to reduce losses in horticultural products.

3.4 STRATEGIC FOOD RESERVE

The objective of National Strategic Grain Reserve project is to ensure national food security, mitigate the impacts of potential shocks to the food supply, and reduce malnutrition and hunger among the population, while avoiding market distortion. The underlying logic was the fact that the Government had to be prepared to protect the poor and vulnerable at time of scarcity of staple foods. As a result, the government of Rwanda through the Ministry of Agriculture and Animal resources decided to invest in the establishment of modern storage facilities on order to support in providing efficient and cost-effective storage solutions for food grains in the country thus reducing post-harvest losses.

Specifically, Strategic grain reserves in Rwanda are intended as a safeguard against food emergencies. Within the context of using a strategic grain reserve there are two main types of food emergencies: acute food emergencies resulting from when a certain proportion of the population is exposed to external event displacing or destroying their food supplies (such as an earthquake destroying household stocks, or flood washing out a bridge and preventing food to move to a

market), or a significant shortfall in production causing rampant inflation in staple food prices. The Strategic Grain Reserve can then be used to release food to the markets to lower the market price, or to provide food to those who cannot afford to buy.

In the FY 2022/2023, the National Strategic Grain Reserves targeted to store 6,120 MT of maize, 3,500MT of beans. Due to available budget, 1,673.761 MT of Maize, 6,533.290 MT of beans, 520.25 MT of maize flour and 330 MT of rice have been purchased and stored as Strategic Grain reserve.

The stock position by end June 2023 was 11,415.4 MT composed of 5,837.2 MT of Maize, beans: 5,330MT of beans, 122.9 MT of rice and 125.2 MT of Maize flour.

Government support through NSGR

1,491 MT of beans, 2,217.6 MT of maize, 395 MT of maize flour & 207 MT of rice have been dispatched to districts and MINEMA for 44,359 households affected by disaster or climate change



Due to Prices fluctuation challenges in the country, MINAGRI through NSGR & EAX has dispatched 4,975.9 MT of maize grains to different companies (MAHWI: 2,669 MT, MINIMEX: 1,165.8 MT, Farmers'Kawunga: 350 MT, NSERICO: 300 MT, NAFACO Ltd: 40 MT, MERRY: 35.112 & 416 MT to TSC) to avail maize flour for stabilizing food price on local market.

The government of Rwanda through MINAGRI has also dispatched 168 MT of maize & 73.030 MT of beans to support Rehabilitation Centres (IWAHA, GITAGATA and NYAMAGABE) and 2,938.6 MT of beans to Rwanda Correctional Centres located in different districts.

2,200 MT of maize grains have been dispatched to AFOS (Army Force Services) from July to October 2022.

CHAPTER 4: ENABLING ENVIRONMENT AND RESPONSIVE INSTITUTIONS

4.1. AGRICULTURE DE-RISKING INTERVENTIONS

Agriculture finance is a national priority to achieve transformation of the agriculture sector and greater financial inclusion. PSTA4 puts in place mechanisms to increase access to finance for farmers. A comprehensive agricultural ecosystem financing programs including lease financing and insurance with a focus on priority value chains have been established to ensure increased financial serves flow across all agriculture value chains.

Currently, Agriculture finance stands at 6% against 10.4% planned in 2024 (NSTA1 target) and the GoR has already made efforts to de-risk the sector through various initiatives including:

- Project on weather-index based crop and livestock insurance.
- Establishment of the Business Development Fund (BDF) which provides guarantees for loans.
- Subsidy policy on agriculture inputs and irrigation equipment.
- Establishment of a commodity exchange market and warehouse receipt system to enable produce in storage to be used as collateral.
- Land consolidation policy where farmers can join their plots of land to create a sizable area for farming.
- Increase area under irrigation as mitigation measures for climate variability.
- Development of higher yielding varieties, resistant to diseases and climate change.

In light of the above initiatives taken to de-risk the sector, some major achievements have been achieved and among these include.

In climate resilience, the country invested in Small Scale Irrigation but also in large schemes development for commercial agribusiness (e.g., the Gabiro Agribusiness Hub) to reduces dependency on rain-fed agriculture making a total of 71,825 Ha under irrigation which makes 70 % of the targets at the end of PSTA4.

To adapt to climate change, the country has invested in land husbandry technologies through construction of terraces to protect land. The coverage of radical terraces is at 97.2% of NST1 target for 2023/24 and progressive terraces coverage stands at 100% of PSTA4 target for 2023/24.

In Agriculture insurance the live animals were insured including 274,506 of Chicken, 7,300 of pigs and 48,962 cattle. On the side of crops, a total of 33,269.86 Hectare of crop were insured, composed of 23,696 ha of Rice, 7932.37 ha of Maize, 1075.6, ha of Irish Potatoes, 102.27 ha of Chili, 25.22 ha of French beans, 222.64 ha of soya beans and 215.41 ha of beans.

4.2 AGRICULTURE SECTOR VISIBILITY AND PUBLIC RELATIONS

The Ministry organised and hosted a series of events that enabled Rwanda’s agriculture stakeholders to connect with their colleagues at national and international levels while increasing the country’s agriculture profile. These events offered opportunities for advanced learning from different agriculture stakeholders and experts while also expanding mutual professional networks.

4.2.1. National events

4.2.1.1. National Celebrations to mark World Food Day 2022

On Friday October 28, 2022, Rwanda marked World Food Day 2022, with the Ministry of Agriculture and Animal Resources and major stakeholders in the agriculture sector including representatives of Rome-based agencies of FAO, IFAD, and WFP joining residents in Muhanga



District to celebrate the world food day.

The day was observed under the theme: “Leave No One Behind, Better Production, Better Nutrition, a Better Environment and a Better Life”.

During the celebrations at Buziranyoni site in Rongi sector, urea fertilizer was applied on maize crops, cows given to vulnerable families, agroforestry tree seedlings planted, and children fed with milk and nutritious food. At the event, the then Minister of Agriculture and Animal Resources, Dr. Gerardine Mukeshimana, urged all farmers in Rwanda to leverage all programmes in the country for

increasing agricultural production, proper post-harvest handling and processing as well as protecting the environment.

World Food Day is celebrated globally each year on 16th October, but each country is free to opt for a convenient date between 16th October and 30th October for national celebrations.

4.2.1.2. Media Field Trip

From 3rd to 4th October 2022, the Ministry of Agriculture and Animal Resources (MINAGRI), through its Agriculture Information and Communication Programme (AICP), organised a media field trip for agriculture reporters with a focus on poultry value chain.



Organized at a time when the Poultry Africa 2022 expo was also taking place in Rwanda from 4 to 6 October 2022, the media field trip on poultry value chain in Rwanda raised awareness about poultry value chain in the country and also strengthened the media coverage of agricultural developments in the country.

During the media field trip, journalists were facilitated to visit poultry hatcheries in the country, and they got to understand how poultry farmers in Rwanda get chicks for farming. They also visited poultry feed processing companies in the country, as well as poultry farmers who acquire the chicks and feed them until they are ready for sale as meat or for laying eggs.

Then the journalists visited the Poultry Africa 2022 expo at Kigali Convention Centre (KCC) and witnessed different technologies that captains of the poultry industry in Rwanda and abroad exhibited at the venue.

4.2.1. 3. Commemorating the 1994 Genocide against the Tutsi

On April 21, 2023, the Ministry of Agriculture and Animal Resources commemorated for the 29th time its former employees, staff of affiliated agencies and projects who were killed during the Genocide perpetrated against the Tutsi in 1994 in Rwanda.

4.2.2. *International events*

Africa Green Revolution Forum (AGRF) 2022

The week-long AGRF 2022 meeting was held in Kigali from September 5 to 9, 2022. It was concluded in Kigali on Friday September 9, 2022 with a sense of optimism and a strong ask for leaders to act decisively and swiftly to implement the ambitions and practical actions discussed during the summit.



The meeting, which brought together over 2400 delegates in Kigali and over 4000 delegates virtually, highlighted the importance of collaboration in fast-tracking progress and emphasized the need for cooperation and capacity building as a response to the various shocks currently affecting the continent's food systems.

At the conference, current and former Heads of State and Government leaders declared their commitment to supporting and driving efforts to build food security and transform food systems, and build a sustainable, profitable, and productive agricultural ecosystem in Africa. They also voiced their determination to direct more resources to agriculture and committed to building stronger partnerships within and outside Africa.

POULTRY AFRICA 2022

Rwanda hosted Poultry Africa in October 2022, the conference and exhibition event about the poultry value chain was Held at the Kigali Convention Center (KCC), the event attracted more than 120 exhibiting companies from more than 20 countries and welcomed more than 2,000

visitors, decision-makers, and buyers. “Rwanda’s poultry industry is transforming from subsistence to a more knowledge intensive and market-oriented poultry farming.

The country’s five years Livestock Master Plan has identified poultry as one of the avenues to contribute to national food security, nutrition security, income generation and job creation. It projected an increase of 124% in chicken meat and 110% in egg production to 2023.

Rwanda’s poultry industry has been growing. In 2019, it had 15 large commercial poultry farmers, 108 mediums, and 222 small commercial poultry farmers. Since then, it has grown to have: 27 large commercial poultry farmers, 258 medium poultry farmers, and 265 small commercial poultry farmers.

Celebration of the 2023 World Bee Day

World Bee Day is normally celebrated on May 20th each year to draw attention to the essential role bees and other pollinators play in keeping people and the planet healthy. In Rwanda, the World Bee Day was celebrated on 2nd June 2023, under the theme "Bee engaged in pollinator-friendly



The celebration was also attended by beekeepers

agriculture production".

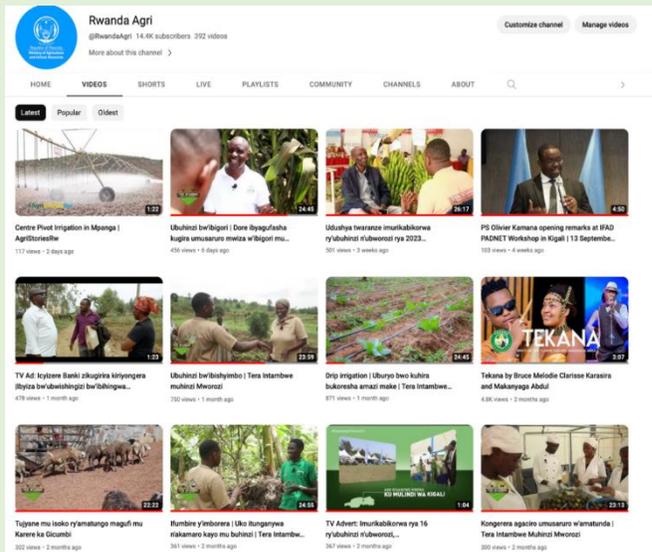
The celebration provided the opportunity for the Ministry of Agriculture and Animal Resources, FAO, NGOs, and civil society to promote actions that will protect and enhance pollinators and their habitats, improve their abundance and

diversity, and support the sustainable development of beekeeping. The celebration of World Bee Day was also an occasion to organize a mini exhibition of honey and other bee products.

4.2.3 Mass communication

The ministry used different channels of communication to raise the profile of Rwanda's agriculture sector and keep the general public and farmers in particular informed of new trends in the country's agriculture sector. In this regard, mass media such as radio, television, newspapers, online and social media were used to reach out to target audiences.

Radio and Television



Community-based radio stations played a great role in reaching out to community farmers and disseminating agricultural messages in different parts of the country. Live and pre-recorded radio talk shows were aired on Radio Rwanda as well as RBA's community radio stations across the country known as RCs (Radios Communautaires); RC Musanze, RC Rubavu, RC Rusizi, RC Huye, and RC Nyagatare. During the financial year, 512

radio talk-shows were aired on Rwanda Broadcasting Agency (RBA)'s Radio Rwanda and its affiliated locally-based community radio stations known in French as Radios Communautaires (RCs).

Some 46 TV talk-shows were also aired on RTV (RBA's Rwanda Television) while 10 TV and radio spots to support media campaigns for healthy diets and awareness for agriculture insurance in line with promoting healthy diets were also aired on RTV and Radio Rwanda. The TV and radio adverts focused on health benefits of eating eggs, the economic benefits of chicken and pig farming, how to access subsidised loans for pig and poultry value chains, as well as post-harvest handling of grains.

You can watch Tera Intambwe TV Show here: <https://www.youtube.com/channel/UCB-oYINxgCdmyEnPi-SWAZw>

Social Media

Social media platforms were used to timely spread information on various sector activities. The main social media outlets used include Twitter, Facebook, Flickr, YouTube, and Instagram.

Media Relations

Media management was on top of the daily work of the communication team at MINAGRI. This included proper handling of media inquiries, arranging media interviews with the ministry's officials, daily media monitoring, and strengthening relationships between the ministry and media fraternity. Good relationship with media enabled the ministry to drive the narrative around its mission, policies, good agricultural practices, and Rwanda's success stories in agriculture sector in a consistent way.

Printed Extension Materials

The development of agricultural extension materials aims at improving knowledge and skills of the frontline extension workers. Different types of printed extension materials were produced, including 7,886 copies of booklets on best production practices for pig and poultry, which were printed and distributed to pig and poultry farmer promoters.

4.2.4. MINAGRI's Call Centre

The Call Centre (accessible by dialling 4127) was used to receive and respond to queries from farmers



across the country. This has enabled not only the farmers to get information from relevant directorates but also the ministry to get feedback from farmers. The Call Centre has been upgraded with a well-functioning Customer Relationship Management (CRM) system and it was used as a toll-free line by all farmers and other agriculture stakeholders in the country to address issues that range from crop and livestock insurance to crop

pest management and access to seeds and fertilisers among other needs.

4.2.5 Audio-visual Production and archiving

During the Financial Year 2022/2023, **49 videos** on Agriculture and Livestock were produced. All produced videos were disseminated through different channels including Media and social media (Twitter, Instagram, YouTube and Facebook). The YouTube Channel of the Ministry of Agriculture and Animal Resources grew from 10,000 subscribers in June 2022 to **14,000** subscribers as of June 2023; an increase of **4000 subscribers** in one year.

You can watch the videos (TV Shows and adverts) on this link:

RwandaAgri: <https://www.youtube.com/channel/UCB-oYINxgCdmyEnPi-SWAZw>

You can access photos here: <https://flickr.com/photos/rwandaagri/albums>

4.3 AGRICULTURAL SECTOR DIGITALIZATION

To align with the smart Rwanda Master Plan, ICT4Rag strategy was developed with a mission to provide a conducive environment for the development, adoption, and increase of the use of ICT in agriculture. The strategy aimed at increasing agriculture productivity through the use of ICT, by promoting harmonization and system integration, public private partnerships, efficiencies and reduced transaction costs, as well as job creation along the agriculture value chain by leveraging ICT. Several systems in the agriculture sector have been/are being put in place and can be grouped into the following categories:

a) Monitor sector performance and support decision-making processes

- **Agriculture Management Information System (MIS):** The system was Developed in 2017 and plays a crucial role in the monitoring and evaluation framework between MINAGRI, its agencies, and other stakeholders. It captures 200 indicators in agriculture productivity, animal resources, cash crops production and export, food security and nutrition, extension services, post-harvest and infrastructure, research, as well as agriculture and livestock insurance scheme. It allows tracking of the implementation of the strategic and operational plans like PSTA 4, annual plans as well as performance contracts, capturing monthly information in a decentralized manner. NGOs working with MINAGRI also report their activities and budget through this MIS.

- **Satellite Crop Monitoring:** Provides a Monthly assessment of crop growth status (and early warning) in the country through satellite images and monthly crop monitoring Bulletin are produced and published.
- **Agriculture Common Data Warehouse:** serve as a central repository of integrated data from various IT systems containing agriculture related data, for data analytics reports and forecast.

b) Provide services to farmers

- **SMART Nkunganire System (SNS):** Developed by Rwandan start-up, BK TecHouse, SNS is an application that enables farmers to register and access subsidized agriculture inputs. It is accessible both offline and online. More than 1.3 million farmers, 1059 Agro-dealers, inputs importers and distributors are registered and use the platform.
- **National Agricultural Insurance Scheme (NAIS):** A system that enables farmers to access financial services and ensure flow of credit to the agriculture sector by derisking agriculture activities through insurance. It helps mitigate risks and losses incurred by farmers due to unpredictable natural disasters, pests and diseases that affect their livestock and crops.
- **Call Center:** Operated at MINAGRI, and provides agriculture related information, offering and Making Information Accessible through Mobile Phones, provide agricultural and livestock products information, cultivation techniques, policy, by call or SMS, farmers get various agricultural information from informers in Agriculture Information Service Center
- **Cure and feed your livestock:** A mobile application providing real time information on animal diseases control and animal feeding strategies to livestock owners.
- **E-Nutrifood:** A mobile application being developed to provide farmers with information on production, conservation, and consumption of nutritious foods.
- **Weather and Crop Calendar:** A mobile application designed to provide farmers with information on weather forecasts and crop calendars.
- **Animal Resources Permit Management System (ARPMS):** A web-based application managing animal transportation permit. This system helps Rwanda citizens and foreigners to acquire live animals permits such internal movement, transit, import and export.

- **Rwanda Livestock Registration and Recording System:** in charge of the management of cattle reproduction events (Artificial insemination, fertility), animal health events (vaccinations, diseases treated, drugs used) production events (milk, growth, feeding, etc), and especially the management of cattle pedigree details for having improved breeds in the future.

c) **Provide information and facilitate private sector, market actors.**

- **Agricultural Land Information System (ALIS):** A web platform that allow us to visually map public land available for investment and private plots with at least 1 hectare, and provides details on plot size, general soil type, proximity to infrastructure and agro-climatic conditions. It also allows MINAGRI to monitor agriculture land use, as well as do planning and management. ALIS1 with 24,000 public plots on 57,000ha whereas ALIS2 with 638, 821 are on private plots 120, 228 ha.
- **Agri-Marketplace:** A mobile application being developed to connect producers and traders to facilitate trade and access to price information. It offers farmers with details on best providers of supplies for raw material purchases and best marketplaces to sell their products, as well as market prices.
- **E-Soko:** Helps farmers and others agriculture players to get access market information using mobile phones.

d) **Ongoing initiatives:**

- **Development of Rwanda National Digital Agriculture Strategy-NDAS (2021-2025):** The NDAS Strategy provides a roadmap to transform agricultural processes, systems, and infrastructure through identifying gaps, opportunities and solutions for the agriculture sector that will harness the transformative and cross-cutting powers of ICTs to accelerate productivity and efficiency in the sector. The strategy also shows how ICT services will support the agricultural sector by providing appropriate, timely services and information to farmers and other related stakeholders.
- **Agriculture inspection and certification support system:** a web based and mobile end to end digital seed control, certification and tracking system to automate seed production starting from plot registration to seed distribution, it handles live animal movement permit (import, export, and transit) and all agriculture products. It allows for online application

for variety registration and protection and offers a portal where the registered varieties and protected varieties are published and made accessible to the general public.

- **Automated command and control system to monitor and control grain storage warehouse and silos facilities:** The intelligent Grain Storage management system (granary management information systems using IoT) that features sensors (humidity, moisture, temperature, aflatoxins detection), IP-cameras.
- **Esoko Plus or E-agro export Platform:** eCommerce platform established to link sellers, buyers and exporters of tea, coffee, horticulture, and emerging value chains products, to support an effective trading, storage and sharing of information. The system aims to digitize the link of agricultural and animal products sellers with buyers on the international and local market.

4.4. PLANNING AND BUDGETING PROCESS FOR 2022/2023 FY

The 2022/2023 fiscal year Planning process started with organizing the Backward Looking (BL) Joint Sector Review (JSR) meeting held on October 25, 2022, at MINAGRI main boardroom. The JSR meeting was chaired by Mr. Jean Claude MUSABYIMANA the Permanent Secretary of MINAGRI and co-chaired by Ms. Asa GIERTZ, Senior Agriculture Economist and Task Team Leader /World Bank on behalf of the Development Partners.

Joint Sector Review Backward Looking

The Agriculture Joint Sector Review forum brings together all Sector Working Group (SWG) stakeholders to engage in policy dialogue and to ensure ownership and accountability in the implementation of the National Strategy for Transformation (NST1), and the Strategic plan of Agriculture transformation (PSTA 4).

One of the key objectives of the BL-JSR meeting was to approve the key priority areas for the 2023/24 fiscal year that informed the planning and budgeting process of the sector. The table below indicates the sector priorities area for FY2023/24.

4.5 Private sector contribution (NGOs, CSOs)

Private sector, farmer's organizations, non-government organizations and civil society organizations are increasingly involved in providing a range of demand-driven agricultural

extension and support services. They increasingly play a role in production and dissemination of inputs required for sustainable and inclusive agricultural development.

Throughout the PSTA 4 there is a strong focus on private investments, as it recognizes that agriculture growth must be driven by investments of private actors. The PSTA 4 therefore emphasizes a stronger role of the private sector, including farmers, with the government becoming a market enabler rather than a market actor. MINAGRI is responsible for coordinating engagement of all relevant stakeholders in the agriculture sector and relevant sectoral programs.

The performance of agriculture sector is due to the efforts deployed by different sector stakeholders including NGOs and civil society organizations. Apart from the GoR's efforts to support poor and vulnerable families, there are other interventions initiated by NGOs and Civil society organizations to assist poor families in the framework of building capacity and improving socio-economic standing of smallholder farming community. In that context, during FY 2022/2023 various stakeholders in agriculture sector contributed to the overall objective of making agriculture a profitable business and a way of positively transforming farmers' lives while considerably contributing to the GDP growth.

Most of the NGO's interventions focused on capacity building made through various trainings given to farmers on good agricultural practices, agriculture value chain development, women leadership and financial inclusion.

- ❖ ***Farmer capacity building*** - In total, these training courses were provided to **26,059 people**, including farmers and other value chain actors at community level.
- ❖ ***Girinka program and small livestock distribution***, **1,253** cows; **2,662** pigs; **3,416** goats; **2,687** sheep and **10,318** poultry were distributed to poor families in 2022/2023.
- ❖ **Farm-inputs provision:**
 - ***Seeds***- Maize: 0.4MT; Beans: 2.2MT; Vegetables seeds: 0.008MT; Fruit seedlings: 306,119; Agroforestry seedlings: 1,501,210; Mushrooms tubes: 256; Irish potato: 70.5MT.
 - ***Fertilizers*** – NPK: 11.283MT; DAP: 0.058MT; UREA: 0.12MT; Organic/compost: 535MT; Lime: 188.5MT.
 - ***Pesticides*** – Fungicides: 472Kg

- ❖ ***Agricultural and market infrastructures*** – Two selling points constructed, 1 by Better World Rwanda in Rwamagana and another by Duterimbere NGO in Nyagatare. A solar-powered irrigation system (2 dam-sheets) was constructed by Duterimbere NGO in Nyagatare District, 2 maize drying facilities and 1 greenhouse constructed by Good Neighbor International Rwanda in Nyaruguru District and 10 water diversion structures were constructed by VI Life Agroforestry in Gicumbi District. One cold room was constructed by Better World Rwanda in Rwamagana.
- ❖ ***Land management (Radical and progressive terraces construction)***- Stakeholders in the agricultural sector have helped provide solutions for sustainable land use and in doing so, some NGOs are helping farmers establish progressive and radical terraces and plant agroforestry trees on croplands to sustainably make their land more productive. In this framework, ARCOS supported farmers to construct progressive terraces on 20 ha and to plant agroforestry trees on 800 ha in Kirehe district. In Karongi District, Good Neighbors International Rwanda constructed radical terraces on 6 ha, INADES formation constructed radical terraces on 10 ha in Gakenke.
- ❖ ***Irrigation and mechanization (Agricultural equipment/materials distribution)*** – Irrigation and mechanization play a vital role in modernizing the sector and more efforts are undoubtedly needed to meet the needs of farmers in the face of the effects of climate change and to fast perform their agricultural operations. World vision Rwanda as one of the agricultural and rural development partners has been managing to support the farming community to address some agriculture-related issues where it provided 31 wheelbarrows, 112 spraying pumps, 128 watering cans, 128 pruners, 2 honey extractors, 2 honey tanks, 25 hives and a complex kit composed of brushes, smokers, jackets, waxes, queen cages, all in Nyagatare District.

Following tables show detailed information/data on contributions /achievements made by different NGOs and civil society organizations intervening in agriculture sector:

NGOs contributions to Farmer’s Capacity building

Implementing Partner Organization	District	Training/skills delivered	Number of people trained	category
AGRAH CARE	Gatsibo	Training of farmers on blended and compound fertilizers	1,868	Farmers

Implementing Partner Organization	District	Training/skills delivered	Number of people trained	category
ARCOS	Kirehe	Training on Sustainable agriculture and land management (SALM) Practices	1,800	Farmers
Caritas Byumba	Gicumbi	Training farmers on farming, environment protection techniques	125	Farmers
Clinton Development Foundation	Kayonza	Train farmers on GAPs and agribusiness	3,000	Farmers
Clinton Development Foundation	Nyagatare	Training farmers on best agronomy practices	1,500	Farmers
Clinton Development Foundation	Nyagatare	Hub Farmers were equipped with smart phones and internet to inform 2800 farmers on price information.	25	Hub Farmers
DUHAMIC ADRI	Kayonza	Trained farmers on GAPs	118	Farmers
FH Rwanda	Gatsibo	Training of smallholder farmers on best agroecological practices on high value cash crops growing (tomatoes, onions) through Farmer Field Schools (FFS)	110	Farmers
FPH MCC	Bugesera	Training of small holder farmers on conservation agriculture, good agriculture practices, post-harvest handling and nutrition.	360	Farmers
Garden for Health International	Gicumbi	Train beneficiaries on animal keeping practices.	165	Farmers
IDH Rwanda	Bugesera	Training (ToT) of farmers on women leadership and financial literacy.	10	Coop members
INADES Formation Rwanda	Kirehe	Training of smallholder farmers on climate resilience and agro-ecological agriculture practices.	20	ToTs
Land o lakes (USAID/Orora wihaze)	Nyamagabe	Training and coaching of existing input providers on business management, customer care and records keeping and best feeds handling practices.	1,625	Agro-dealers, Chick's producers, producers of fingerlings.
PRIESTMEAD	Gicumbi	Training of farmers on good agriculture and livestock practices.	620	Farmers
RDO (Rwanda Development Organization)	Nyagatare	Training farmers on soil management practices (agroecology principles & agroforestry)	120	Farmers

Implementing Partner Organization	District	Training/skills delivered	Number of people trained	category
RDO (Rwanda Development Organization)	Nyagatare	Women were trained on financial management	30	Farmers
RDO (Rwanda Development Organization)	Nyagatare	Training on Good Agricultural Practices (GAP)	394	Farmers
RDO (Rwanda Development Organization)	Nyagatare	Training Postharvest Handling and Storage (PHHS)	1,071	Farmers
RDO (Rwanda Development Organization)	Nyanza	Training Postharvest Handling and Storage (PHHS)	5,000	Farmers
RDO (Rwanda Development Organization)	Nyabihu	Training farmers through FFS on regenerative agriculture.	954	Farmers
RDO (Rwanda Development Organization)	Kirehe	Training on post-harvest activities	5,170	Farmers
RODI	Nyanza	Coaching on GAPs in horticultural business	53	Youth farmers
Sustainable Growers Rwanda	Gicumbi	Climate smart Agriculture training (farming as family business).	143	Farmers
Sustainable Growers Rwanda	Rusizi	Training on GAP	138	Women coffee farmers
AEE Rwanda	Rusizi	Training on Horticulture	240	farmers
VI Life Agroforestry	Gicumbi	Training for enhancing community's capacity to adapt and mitigate Climate Change	245	Farmers
VI Life Agroforestry	Gicumbi	Training on FFS for agroforestry (crop & livestock)	89	FFS facilitators
WYCA (Women and Youth Christian Association)	Gicumbi	Train farmers on horticulture value chain development	56	Farmers
WYCA (Women and Youth Christian Association)	Gicumbi	Capacity building on good agriculture practices	82	Farmers

Implementing Partner Organization	District	Training/skills delivered	Number of people trained	category
Ripple Effect/Send a cow	Bugesera	Vegetable production, Gender	928	Farmers
TOTAL			26,059	

NGOs contributions to GIRINKA Program and Small livestock distribution

District	Partner Organization	Cows	Goats	Sheep	Pigs	Poultry
Burera	Action Nord Sud	16				
Nyamagabe	AEBR Terimbere				60	
Muhanga	Bureau Social	80				
Rusizi	C. DORMANS	19				
Rusizi	Compassion International		46			
Kirehe	Compassion International	4	2,170		515	4,201
Nyamagabe	Compassion International	13	227		467	
Nyaruguru	Compassion International	17				
Nyanza	Compassion International	6	270		4	
Nyamagabe	Conseil Consultatif de Femmes				97	1,390
Nyamagabe	EAR Kigeme Diocese	2				
Gatsibo	Education and Health		34			500
Nyamagabe	Embrace Rwanda International Society				30	480
Muhanga	Fight Hunger					3,000
Bugesera	FPH MCC					60
Gicumbi	Garden for Health International					687
Bugesera	GASORE Foundation		363			
Nyamagabe	HILFSWERK MARGARIT FUCHS RWANDA	60				
Nyagatare	RDO (Rwanda Development Organization)		141			
Nyaruguru	Ripple Effect	15	100			

Gicumbi	Spark microgrant	1,021		1,800	1,489	
Burera	World Relief Rwanda			887		
Ngororero	Food for the Hungry		65			
Total		1,253	3,416	2,687	2,662	10,318

NGOs contributions to Farm-inputs provision: Seeds provided.

District	Implementing Partner Organization	Maize (MT)	Beans (MT)	Vegetables seeds (MT)	Fruit seedlings produced and planted. (Number)	Agroforestry seedlings produced and planted (Number)	Mushroom (Tubes)	Irish potato (MT)
Nyamagabe	Association Rwandaise pour la Promotion de Développement Intégré						256	
Bugesera	BMZ&HGFD	0.4	0.5					
Rusizi	CIMERWA				2,642			
Nyamasheke	Compassion International		1.7		1,200			
Gatsibo	Education and Health				2,800			
Nyaruguru	Good Neighbours International Rwanda							70.5
Kirehe	INADES Formation Rwanda					20,010		
Muhanga	PANDAMU				10,000			
Nyagatare	RDO (Rwanda Development Organization)			0.008		5,000		
Nyaruguru	Red Cross Rwanda				32,700	21,000		
Nyamasheke	REDIRE				1,000	20,000		
Nyamagabe	UNICOOPAGI				15,000			
Bugesera	World Vision				99,000	900,000		
Gatsibo	World Vision				141,777	535,200		
Total		0.4	2.2	0.008	306,119	1,501,210	256	70.5

NGOs contributions to Farm-inputs provision: Fertilizers & lime provided.

District	Implementing Partner Organization	NPK (MT)	DAP (MT)	UREA (MT)	Organic/compost (MT)	Lime (MT)
Nyamasheke	Compassion International	0.783	0.058	0.12		14
Gatsibo	Education and health					19.5
Nyaruguru	Good Neighbours International Rwanda	10.5			525	155
Nyabihu	International Gorilla conservation				10	
Total		11.283	0.058	0.12	535	188.5

NGOs contributions to Farm-inputs provision: Pesticides provided.

District	Implementing Partner Organization	Fungicides		
Nyaruguru	Good Neighbors International Rwanda	472 Kg		

NGOs contributions to Agricultural and market infrastructures establishment

District	Implementing Partner Organization	# of Warehouses constructed	# of Selling point constructed	# of Maize drying facilities constructed	# of Greenhouses constructed	# of Water diversion structures constructed	# of Solar-powered irrigation system	Cold room
Nyaruguru	Good Neighbors International Rwanda			2	1			
Gicumbi	VI Life Agroforestry					10		
Nyagatare	DUTERIMBERE NGO		1				1	
Rwamagana	Better World Rwanda		1					1
Total		0	1	2	1	10	1	

NGOs contributions to Land management: Radical and progressive terraces constructed.

District	Implementing Organization	Partner	Radical (Ha)	Progressive (Ha)	Area planted Agroforestry species (Ha)
Kirehe	ARCOS			20	800
Karongi	Good Neighbors International Rwanda		6		
Gakenke	INADES Formation		10		
Total			16	20	800

NGOs contributions to Irrigation and mechanization: Agricultural equipment/materials provided.

District	Partner Org.	Well barrow	Spraying pumps	Watering can	Pruners	Honey extractors	Honey tanks	Hives	complex kit
Nyagatare	World Vision	31	112	128	128	2	2	25	Brushes,smokers, jackets, waxes, queen cages

General Comment

Many NGOs in agriculture sector deliver their services in remote rural areas and work with the low-income populations in subsistence farming, poorest and the most vulnerable groups. Since their funding is usually external, their accountability and demand orientation are not automatic, but depend on the policy and practices of the particular NGO. Most of NGOs programs and projects achievements are not all captured in the overall report of the achievements made in agriculture sector, therefore there is a need to enhance joint planning, monitoring, evaluation, reporting and coordination of efforts of all sector stakeholders.

Table 22: Agriculture Sector Priority Areas for 2023/2024 FY

Priorities	Justifications	Proposed Key Actions
1. Strengthen the use of agriculture inputs, research, and extension services to boost productivity	<ul style="list-style-type: none"> ▪ Only 31.9 % of small-scale farmers used improved seeds in season 2022 A (SSF:31.9 %; LSF:81.7%) ▪ Only 37.6% of small-scale farmers applied inorganic fertilizer in season 2022 A (SSF:37.6%; LSF:83.5%) 	<ul style="list-style-type: none"> ▪ Support farmers to access improved seeds, fertilizers, lime, and pesticides ▪ Promotion of production and use of organic fertilizers ▪ Strengthen local seed production to ensure self-sufficiency in quality seeds

Priorities	Justifications	Proposed Key Actions
	<ul style="list-style-type: none"> ▪ Percentage of farmers who applied organic fertilizer: SSF: 69.7%; LSF: 73.8% (SAS: Season A 2022) ▪ Only 18.6% of small-scale farmers applied pesticides (SSF:18.6%; LSF: 72.3%) ▪ Only 65% of farmers benefit of extension services (AHS 2020) 	<ul style="list-style-type: none"> ▪ Increasing animal feeds and livestock water availability ▪ Mainstream the use of animal breeds that are more productive ▪ Reduce the incidence of major endemic animal diseases ▪ Strengthen the organization of animal product value chain ▪ Strengthen the capacity of extensionists
2. Build resilience to climate change effects and other disasters for smart agriculture	<ul style="list-style-type: none"> ▪ Only 8.2% of farmers practiced irrigation, where 7% of small-scale farmers and 59.8% of large-scale farmers (SAS,2022) 	<ul style="list-style-type: none"> ▪ Finalization of the irrigation strategy ▪ Construction of Radical and Progressive terraces ▪ Construction of Marshland, Hillside, and Small-scale irrigation ▪ Plantation of Agro-forestry and fruits trees ▪ Train farmers on integrated farming practices, climate-smart and green production technologies. ▪ Strengthening the farmers' use of climate information in taking agricultural decisions
3. Reinforce post-harvest management of crop and animal products for Food quality and safety	<ul style="list-style-type: none"> ▪ Postharvest losses: Maize:18.6%; Wheat: 20.8%; Rice: 15.4%; Irish Potato:25%; Beans:11% (MINAGRI Report, 2020/21) ▪ Farmer are still having difficulties to access post-harvest facilities which causes big losses, affect the quality of produce and revenues of farmers 	<ul style="list-style-type: none"> ▪ Invest in post-harvest handling facilities for both crops and animal products ▪ Set up a Post-Harvest Loss Monitoring and Evaluation system ▪ Capacity building on post-harvest handling and management. ▪ Ensure quality and food safety standards of agricultural produce.
4. Enhance the commercial of agriculture products to increase revenues earned from local, regional and international markets	<ul style="list-style-type: none"> ▪ Limited access to market information ▪ Difficulties in complying with market requirements (quality and food safety standards). 	<ul style="list-style-type: none"> ▪ Conduct market survey (new and existing) on selected agricultural commodities. ▪ Mapping of new and existing stakeholders in selected value chain and areas of intervention. ▪ Strengthen Agriculture Public-Private Dialogues and Value Chain Platforms ▪ Improve the marketing of agri-export products
5. Increase access to agriculture finance and risk-sharing facilities	<ul style="list-style-type: none"> ▪ Only 38.7% of agricultural households had at least one member who requested an agricultural loan (AHS, 2020) ▪ Only 4.81% of the credit to the agriculture sector as a percentage of total loans 	<ul style="list-style-type: none"> ▪ Reinforce the insurance to de-risk the sector and scale up the existing national agriculture insurance program. ▪ Support the private sector to access agriculture matching grants. ▪ Capacity building of farming households/SMEs on Business plans and Management.

Priorities	Justifications	Proposed Key Actions
		<ul style="list-style-type: none"> Conduct a holistic agriculture financing situation analysis and needs assessment for both supply and demand sides of informal and formal lending in Agriculture.

Budget Performance

The source of the budget executed by MINAGRI central, and its implementing agencies (RAB and NAEB) came from Government (domestic budget) and Development Partners (loan and/or grant). The revised budget allocated to MINAGRI and its affiliated agencies in 2022/23 FY was Frw **125,851,415,807** executed at 90%.

Table 23: Budget Execution per Agencies 2021/2022

Institutions	Budget types	Revised budget 2022/23	Executed budget	%
MINAGRI Central	Recurrent	2,302,290,783	2,232,602,801	97
	Development	10,478,301,924	12,755,818,730	122
	S/total	12,780,592,707	14,988,421,531	117
RAB	Recurrent	4,471,665,966	4,454,955,285	100
	Development	93,356,805,550	80,610,583,775	86
	S/total	97,828,471,516	85,065,539,060	87
NAEB	Recurrent	929,594,323	929,594,323	100
	Development	14,312,757,261	11,933,614,935	83
	S/total	15,242,351,584	12,863,209,258	84
Total		125,851,415,807	112,917,169,849	90

Source: MINECOFIN

From table 4, we find that the revised budget allocated to MINAGRI Central was executed at 117%, RAB at 87% and NAEB at 84%.

Regarding budget execution per type of budget (domestic, external & districts on agriculture programs) we realized that the revised total budget allocated to MINAGRI Central, RAB, NAEB and, Districts agriculture programs was 176,653,798,208 executed at 93%.

Table 24: Budget Execution per type (Domestic, External & Districts agriculture programs)

BUDGET TYPES	Revised Budget 2022/23	Executed Budget	%
Recurrent	7,703,551,072	7,617,152,409	99
Development (Internal)	60,987,473,739	60,058,524,728	98
Development (External)	57,160,390,996	45,241,492,712	79
Districts Budget Execution on Agriculture Programs (including Earmarked Transfers)	50,802,382,401	51,814,474,638	102
Total	176,653,798,208	164,731,644,487	93

Source: MINECOFIN

As shown in table 5, the recurrent budget was executed at 99%, the domestic development budget at 98%, external development (loan & grant) at 79% while the budget allocated to agriculture programs in districts was executed at 102%.

In general, the external funds registered low rate of budget execution (79%) due to low performance of some externally funded project such as Commercialization and De-Risking for Agricultural Transformation Project (CDAT) (50%); Export Targeted Modern Irrigation (ETI) (61%) and RAB Competitive Research (52%).

ANNEXES

Annex 1: Budget Execution per Programs and Subprograms

No.	Programmes	Sub-programmes	Revised Budget 2022/23	Executed Budget	%
1	AGRICULTURE RESEARCH AND EXTENSION		4,300,570,482	3,212,090,883	75
		1. Research and Innovation	2,656,053,589	1,991,745,526	75
		2. Extension Services and Technology Adaptation and Skills Development	1,644,516,893	1,220,345,357	74
2	SUSTAINABLE CROPS AND ANIMAL RESOURCES PRODUCTION AND PRODUCTIVITY		88,990,735,068	77,339,001,992	87
		1. Sustainable, Diversified and Climate Smart Crop Production and Productivity	61,840,030,419	53,655,146,941	87
		2. Sustainable Animal Resources Production and Productivity	18,585,824,055	16,123,696,078	87
		3. Nutrition-sensitive agriculture and Resilience Mechanisms	8,564,880,594	7,560,158,973	88
3	VALUE ADDITION AND COMPETITIVENESS OF CROPS AND ANIMAL RESOURCES		22,320,363,300	22,798,281,378	102
		1. Food Systems for domestic market supply	7,942,106,039	10,805,175,543	136
		2. Traditional Export Crop Development	8,644,106,691	9,288,877,711	107
		3. Export Diversification	5,668,650,570	2,644,737,224	47
		4. Farmers -Market linkages infrastructures	65,500,000	59,490,900	91
4	ENABLING ENVIRONMENT AND RESPONSIVE INSTITUTIONS		2,666,340,822	2,053,643,187	77
		1. Agriculture Sector Planning, Coordination, Financing and Information Systems	416,560,512	344,876,449	83
		2. Animal Resources Policy, Strategies Development	595,857,374	561,391,373	94
		3. Crop Policy and Strategies Development	1,653,922,936	1,147,375,365	69
5	ADMINISTRATIVE AND SUPPORT SERVICES		7,573,406,135	7,514,152,409	99
		Administrative And Support Services	7,573,406,135	7,514,152,409	99
TOTAL			125,851,415,807	112,917,169,849	90

Annex 2: MINAGRI Central Projects Budget Execution 2022/23 FY

Projects	Revised Domestic Budget	Revised External Grant	Total	Executed Budget	%
Smart Agriculture Information System (SAIS)	346,060,512	224,264,234	570,324,746	505,637,267	89
Agricultural Insurance Project (AIP)	413,196,405	1,370,224,734	1,783,421,139	1,363,096,890	76
National Strategic Grain Reserve Project	7,174,305,518	756,300,521	7,930,606,039	10,793,675,543	136
Buffet Project (Nasho Irrigation)	190,950,000		190,950,000	90,950,000	48
Deeping Efforts to accelerate Nationally Determined Contribution (NDC) implementation project	3,000,000	-	3,000,000	2,459,030	82
TOTAL	8,127,512,435	2,350,789,489	10,478,301,924	12,755,818,730	122

Annex 3: NAEB Projects Budget Execution 2022/23 FY

Projects	Revised Domestic Budget	Executed Budget	%
Improving Coffee Production, Productivity and Quality	6,375,123,521	6,052,838,431	95
Tea Expansion Project	2,268,983,170	3,236,039,280	143
Sericulture Project	173,160,633	166,726,865	96
Export Logistics Development	1,254,067,979	412,935,429	33
Flower Park Construction	1,400,000,000	1,400,000,000	100
Commodity Chain Development (Horticulture Intensification and Quality Management)	146,783,421	145,004,968	99
Kigali Wholesale Market	2,605,000,000	455,324,086	17
Development of New Agriculture Export Chain	89,638,537	64,745,876	72
TOTAL	14,312,757,261	11,933,614,935	83

Annex 4: RAB Projects Budget Execution 2022/23 FY

Projects	Revised Domestic Budget	Revised External Loan	Revised External Grant	Total	Executed Budget	%
Project: One Cow Per Family	20,000,000	-	-	20,000,000	18,000,000	90
The Project for Valorization of Rurambi Irrigation Scheme in Bugesera District.	770,415,148	-	-	770,415,148	658,793,857	86
RAB Competitive Research Project	-	6,000,000	1,660,336,579	1,666,336,579	863,433,379	52
Rwanda Dairy Development Project (RDDP)	243,750,000	5,118,755,102	-	5,362,505,102	4,832,627,954	90
Export Targeted Modern Irrigation (ETI)	1,035,551,313	13,038,942,528	-	14,074,493,841	8,566,485,771	61
Development of Market Responsive plant varieties and seed systems to reduce Rwanda's dependency on seed importation	1,398,299,849	-	-	1,398,299,849	1,172,150,977	84
Government Funded Modern Irrigation (GFI)	5,631,983,180	-	-	5,631,983,180	4,430,097,961	79
Small Scale Irrigation Technology (SSIT).	91,965,041	-	-	91,965,041	88,247,823	96
Horticulture Center of Excellence (HCoE)	193,864,980	-	-	193,864,980	179,799,236	93
Aquaculture and fisheries development	986,592,874	-	-	986,592,874	773,739,385	78
Agriculture Mechanization Project	216,191,104	-	-	216,191,104	201,070,240	93
Livestock Infrastructure Support Program (LISP)	2,304,738,643	-	-	2,304,738,643	985,822,667	43
Sustainable Agriculture Intensification and Food Security Project (SAIP)	531,863,736	-	10,152,420,233	10,684,283,969	10,273,146,467	96
Livestock Intensification Program(LIP)	3,574,677,016	-	-	3,574,677,016	3,863,638,939	108
Priority Crop Intensification Project(Including fertilizer import)	4,722,433,843	-	-	4,722,433,843	6,696,853,745	142
Development of efficient and inclusive market-systems for value chains of poultry and pig industries under ENABEL funds	3,067,000	-	698,094,077	701,161,077	630,278,494	90

Projects	Revised Domestic Budget	Revised External Loan	Revised External Grant	Total	Executed Budget	%
Technology development for enhancement of food safety and Value addition in Agriculture	241,218,662	-	-	241,218,662	188,391,566	78
Kayonza Irrigation and Integrated Watershed management Project (KIIWP)	146,250,000	3,338,298,998	-	3,484,548,998	3,236,848,154	93
Gabiro Agri-Business Hub Project	15,946,173,371	-	-	15,946,173,371	18,292,140,630	115
Sustainable Agricultural Productivity and Market linkage Project (SAPMP)	194,668,283	-	968,007,295	1,162,675,578	941,209,897	81
Rural Poor Stimulus Facility project	-	-	325,340,242	325,340,242	325,288,352	100
Partnership for Resilient and Inclusive Small Livestock Markets (PRISM)	222,250,000	5,413,899,343	-	5,636,149,343	5,019,588,639	89
Kayonza Irrigation and Integrated Watershed Management Project KIIWP2),Phase II	71,250,000	4,000,309,003	-	4,071,559,003	3,285,115,713	81
Commercialization and De-Risking for Agricultural Transformation Project (CDAT)	-	7,885,076,890	2,204,121,217	10,089,198,107	5,087,813,929	50
Total	38,547,204,043	38,801,281,864	16,008,319,643	93,356,805,550	80,610,583,775	86

Annex 5: Districts Budget Execution on Agriculture Programs

Districts	Revised Budget 2022/23	Executed Budget	%
4000 NGOMA DISTRICT	1,910,661,199	1,959,415,503	103
D5 Agriculture	1,910,661,199	1,959,415,503	103
D501 Sustainable Crop Production	1,637,182,260	1,685,936,564	103
D502 Sustainable Livestock Production	231,511,235	231,511,235	100
D503 Producer Professionalisation	41,967,704	41,967,704	100
4100 BUGESERA DISTRICT	1,703,151,776	1,861,474,521	109
D5 Agriculture	1,703,151,776	1,861,474,521	109
D501 Sustainable Crop Production	1,416,162,437	1,564,485,182	110
D502 Sustainable Livestock Production	228,096,047	238,096,047	104
D503 Producer Professionalisation	58,893,292	58,893,292	100
4200 GATSIBO DISTRICT	2,157,563,544	2,260,348,224	105
D5 Agriculture	2,157,563,544	2,260,348,224	105
D501 Sustainable Crop Production	1,919,987,098	2,022,771,778	105
D502 Sustainable Livestock Production	237,576,446	237,576,446	100
4300 KAYONZA DISTRICT	2,095,334,880	2,122,824,386	101
D5 Agriculture	2,095,334,880	2,122,824,386	101
D501 Sustainable Crop Production	1,875,230,839	1,902,720,345	101
D502 Sustainable Livestock Production	218,182,211	218,182,211	100
D503 Producer Professionalisation	1,921,830	1,921,830	100
4400 KIREHE DISTRICT	1,199,352,334	1,309,176,721	109
D5 Agriculture	1,199,352,334	1,309,176,721	109
D501 Sustainable Crop Production	893,088,708	1,002,913,095	112
D502 Sustainable Livestock Production	248,144,797	248,144,797	100
D503 Producer Professionalisation	58,118,829	58,118,829	100
4500 NYAGATARE DISTRICT	5,067,328,404	5,241,056,801	103
D5 Agriculture	5,067,328,404	5,241,056,801	103
D501 Sustainable Crop Production	4,872,179,933	5,045,908,330	104
D502 Sustainable Livestock Production	195,148,471	195,148,471	100
4600 RWAMAGANA DISTRICT	1,418,950,031	1,526,775,598	108
D5 Agriculture	1,418,950,031	1,526,775,598	108
D501 Sustainable Crop Production	1,159,229,962	1,267,055,529	109

Districts	Revised Budget 2022/23	Executed Budget	%
D502 Sustainable Livestock Production	215,014,302	215,014,302	100
D503 Producer Professionalisation	44,705,767	44,705,767	100
4700 HUYE DISTRICT	918,643,361	938,172,926	102
D5 Agriculture	918,643,361	938,172,926	102
D501 Sustainable Crop Production	749,597,244	769,126,809	103
D502 Sustainable Livestock Production	169,046,117	169,046,117	100
4800 NYAMAGABE DISTRICT	2,452,704,696	2,483,224,033	101
D5 Agriculture	2,452,704,696	2,483,224,033	101
D501 Sustainable Crop Production	2,200,300,288	2,230,819,625	101
D502 Sustainable Livestock Production	193,460,141	193,460,141	100
D503 Producer Professionalisation	58,944,267	58,944,267	100
4900 GISAGARA DISTRICT	957,565,570	957,565,569	100
D5 Agriculture	957,565,570	957,565,569	100
D501 Sustainable Crop Production	786,959,646	786,959,645	100
D502 Sustainable Livestock Production	170,605,924	170,605,924	100
5000 MUHANGA DISTRICT	1,018,729,677	1,066,065,071	105
D5 Agriculture	1,018,729,677	1,066,065,071	105
D501 Sustainable Crop Production	666,778,437	714,113,831	107
D502 Sustainable Livestock Production	351,951,240	351,951,240	100
5100 KAMONYI DISTRICT	1,084,238,109	1,111,627,609	103
D5 Agriculture	1,084,238,109	1,111,627,609	103
D501 Sustainable Crop Production	887,993,724	915,383,224	103
D502 Sustainable Livestock Production	157,917,318	157,917,318	100
D503 Producer Professionalisation	38,327,067	38,327,067	100
5200 NYANZA DISTRICT	1,182,232,129	1,255,611,628	106
D5 Agriculture	1,182,232,129	1,255,611,628	106
D501 Sustainable Crop Production	831,144,329	904,523,828	109
D502 Sustainable Livestock Production	325,417,137	325,417,137	100
D503 Producer Professionalisation	25,670,663	25,670,663	100
5300 NYARUGURU DISTRICT	2,382,322,470	2,428,171,412	102
D5 Agriculture	2,382,322,470	2,428,171,412	102
D501 Sustainable Crop Production	2,148,272,334	2,194,121,276	102

Districts	Revised Budget 2022/23	Executed Budget	%
D502 Sustainable Livestock Production	168,414,775	168,414,775	100
D503 Producer Professionalisation	65,635,361	65,635,361	100
5400 RUSIZI DISTRICT	1,432,863,385	1,432,863,385	100
D5 Agriculture	1,432,863,385	1,432,863,385	100
D501 Sustainable Crop Production	1,137,353,255	1,137,353,255	100
D502 Sustainable Livestock Production	286,552,836	286,552,836	100
D503 Producer Professionalisation	8,957,294	8,957,294	100
5500 NYABIHU DISTRICT	2,278,652,377	2,285,523,952	100
D5 Agriculture	2,278,652,377	2,285,523,952	100
D501 Sustainable Crop Production	2,021,284,149	2,028,155,724	100
D502 Sustainable Livestock Production	212,012,081	212,012,081	100
D503 Producer Professionalisation	45,356,147	45,356,147	100
5600 RUBAVU DISTRICT	2,145,474,116	2,145,474,116	100
D5 Agriculture	2,145,474,116	2,145,474,116	100
D501 Sustainable Crop Production	1,931,631,612	1,931,631,612	100
D502 Sustainable Livestock Production	143,811,607	143,811,607	100
D503 Producer Professionalisation	70,030,897	70,030,897	100
5700 KARONGI DISTRICT	1,431,642,716	1,431,642,714	100
D5 Agriculture	1,431,642,716	1,431,642,714	100
D501 Sustainable Crop Production	979,778,199	979,778,198	100
D502 Sustainable Livestock Production	451,864,517	451,864,516	100
5800 NGORORERO DISTRICT	1,866,830,581	1,866,830,581	100
D5 Agriculture	1,866,830,581	1,866,830,581	100
D501 Sustainable Crop Production	1,662,586,463	1,662,586,463	100
D502 Sustainable Livestock Production	156,832,051	156,832,051	100
D503 Producer Professionalisation	47,412,067	47,412,067	100
5900 NYAMASHEKE DISTRICT	1,522,692,491	1,522,692,491	100
D5 Agriculture	1,522,692,491	1,522,692,491	100
D501 Sustainable Crop Production	1,226,235,607	1,226,235,607	100
D502 Sustainable Livestock Production	265,389,271	265,389,271	100
D503 Producer Professionalisation	31,067,613	31,067,613	100
6000 RUTSIRO DISTRICT	1,610,193,273	1,610,193,273	100

Districts	Revised Budget 2022/23	Executed Budget	%
D5 Agriculture	1,610,193,273	1,610,193,273	100
D501 Sustainable Crop Production	1,320,002,500	1,320,002,500	100
D502 Sustainable Livestock Production	240,740,206	240,740,206	100
D503 Producer Professionalisation	49,450,567	49,450,567	100
6100 BURERA DISTRICT	3,573,929,076	3,573,929,076	100
D5 Agriculture	3,573,929,076	3,573,929,076	100
D501 Sustainable Crop Production	3,456,991,497	3,456,991,497	100
D502 Sustainable Livestock Production	116,937,579	116,937,579	100
6200 GICUMBI DISTRICT	1,436,891,247	1,436,891,247	100
D5 Agriculture	1,436,891,247	1,436,891,247	100
D501 Sustainable Crop Production	1,193,096,391	1,193,096,391	100
D502 Sustainable Livestock Production	217,093,589	217,093,589	100
D503 Producer Professionalisation	26,701,267	26,701,267	100
6300 MUSANZE DISTRICT	3,501,732,669	3,501,732,669	100
D5 Agriculture	3,501,732,669	3,501,732,669	100
D501 Sustainable Crop Production	3,329,952,068	3,329,952,068	100
D502 Sustainable Livestock Production	147,259,001	147,259,001	100
D503 Producer Professionalisation	24,521,600	24,521,600	100
6400 RULINDO DISTRICT	961,301,284	961,301,283	100
D5 Agriculture	961,301,284	961,301,283	100
D501 Sustainable Crop Production	739,470,350	739,470,349	100
D502 Sustainable Livestock Production	157,510,092	157,510,092	100
D503 Producer Professionalisation	64,320,842	64,320,842	100
6500 GAKENKE DISTRICT	1,511,448,165	1,535,164,165	102
D5 Agriculture	1,511,448,165	1,535,164,165	102
D501 Sustainable Crop Production	1,311,730,913	1,335,446,913	102
D502 Sustainable Livestock Production	171,321,058	171,321,058	100
D503 Producer Professionalisation	28,396,194	28,396,194	100
6600 RUHANGO DISTRICT	936,950,148	945,722,991	101
D5 Agriculture	936,950,148	945,722,991	101
D501 Sustainable Crop Production	683,734,664	692,507,507	101
D502 Sustainable Livestock Production	228,597,255	228,597,255	100

Districts	Revised Budget 2022/23	Executed Budget	%
D503 Producer Professionalisation	24,618,229	24,618,229	100
7000 KIGALI CITY	1,043,002,693	1,043,002,693	100
D5 Agriculture	1,043,002,693	1,043,002,693	100
D501 Sustainable Crop Production	877,669,666	877,669,666	100
D502 Sustainable Livestock Production	162,413,929	162,413,929	100
D503 Producer Professionalisation	2,919,098	2,919,098	100
Total	50,802,382,401	51,814,474,638	102

Annex 6: Projects Performance for 2022/2023 FY

S/N	Project Basic Information	Details of the project progress
1	<p>Project name: Tea Expansion Project</p> <p>Location: Gicumbi, Nyabihu, Nyamagabe, Ngororero, Nyamasheke, Nyaruguru, Rubavu, Karongi, Rutsiro, Rusizi, and Rulindo</p> <p>FY2022/23 Revised Budget: 3,240,831,970 Rwf</p> <p>Project objectives: The Tea Expansion Project was an initiative with the primary goal of boosting tea cultivation, production, and potentially increasing tea product exports. The project's implementation typically entailed identifying specific geographic regions for expansion, scaling up tea production to meet rising demand, enhancing tea quality, promoting sustainability, and entering new markets. This endeavour also encompassed expanding existing tea plantations, introducing novel tea varieties, and implementing modern cultivation techniques. Equally important was the identification, engagement, and close collaboration with key stakeholders like tea producers, exporters, and potential partners.</p> <p>Key Outputs:</p> <ul style="list-style-type: none"> - The project should aim to yield a higher volume of tea leaves or processed tea products compared to the previous levels. - Establishing new tea plantations and expanding existing ones. - Improved agricultural practices, such as pruning, and fertilization application to enhance tea bush productivity. - Expanding the market reach of tea products, including entering new geographic markets <p>Annual targets</p> <ul style="list-style-type: none"> - Boost tea production to 40,313 MT from 34,640 MT. - Expand the cultivated tea area by 500 hectares. - Enhance tea export quantities from 34,394 MT to 38,881 MT. 	<p>Annual budget spending: 3,236,039,280</p> <p>FY 2022-23 annual achievements against targets:</p> <ul style="list-style-type: none"> ▪ Production of made tea reached 40,874.3 metric tons, surpassing the total target by 101.3% ▪ 39,008.9 metric tons of made tea were exported, surpassing the annual target by 100.3%. ▪ A total of USD 107.7 million was generated through tea exports, achieving 95.3% of the predetermined targets. ▪ The fertilizer fund acquired and disseminated a total of 14,500.9 tons of NPK 25-5-5 +5S, NPK 25-5-5, NPK 20-10-10, and MOP fertilizers. ▪ During FY2022/23, tea productivity was 4.9 MT/Ha equivalent to 61.2% of set targets by 2024 ▪ 28.983 MT of tubing(s) and 19.811 MT of sheeting(s) were distributed in preparations of tea seedlings. ▪ 7,380,000 tea seedlings were prepared by Coopthega, Sorwathe, Katecogro, Coopthevigi, Rutegroc. ▪ 7,500 tea pluckers were trained in plucking skills and post-plucking leaf management whereas also 23 individuals in tea production were trained of value addition. ▪ Rwanda's tea gained visibility and was featured at various international events, including the Salon International de l'Agriculture, Agrishow, the Made in Rwanda Expo in Stockholm, the North American Tea Conference and Exhibition, as well as the Saudi Arabia Trade Mission and Exhibition. <p>Key challenges faced:</p> <ul style="list-style-type: none"> - Shortage of tea pluckers that affects quantity of green leaf plucked - Poor feeder roads that affect the quality of plucked and made tea - Price fluctuations on International markets

S/N	Project Basic Information	Details of the project progress
	<ul style="list-style-type: none"> - Raise tea export earnings from USD 90 million to USD 113 million. - Support tea cooperatives to purchase and Apply additional 98 MT of Mineral Fertilizers. 	
2	<p>Project name: Improving Coffee Production, Productivity and Quality</p> <p>Location: 29 Districts except Kicukiro</p> <p>FY2022/23 Revised Budget: 6,212,807,271 Rwf</p> <p>Project objectives: Enhancing coffee production, productivity, and quality project was initiated to increase coffee yields and improved quality for participating farmers, enhancing climate resilience, improving livelihoods for coffee farming communities, and having a stronger and more competitive coffee sector in the global market.</p> <p>Key Outputs:</p> <ul style="list-style-type: none"> - Increased coffee exported quantities & revenues generated - Increased productive area planted with coffee for exports - Coffee quality maintained through control and assurance programs at processing and export levels - New markets explored and market linkages for coffee producers, both domestically and internationally created <p>Annual targets</p> <ul style="list-style-type: none"> - In 2022/2023, we aimed to raise green coffee production from 21,313 MT to 23,966 MT. - Boost coffee export volumes from 16,881 MT to 23,966 MT. - Increase coffee export revenues from USD 60.75 million to USD 83 million in 2022/2023. - Assisting with the purchase, distribution, and application of 1,000 MT of mineral fertilizer and 9,000 L of insecticide for coffee plantations. - Provide planting materials (28 MT of tubing and urea) to produce 7 million coffee seedlings for expanding coffee cultivation on 500 Ha and filling gaps on 1,820 hectares. - Organize coffee exhibitions in Japan, the USA, and the Netherlands. 	<p>Annual budget spending: 5,613,706,431 Rwf</p> <p>FY 2022-23 annual achievements against targets:</p> <ul style="list-style-type: none"> ▪ Coffee production for the fiscal year 2022/23 amounted to 19,673.2 metric tons, equivalent to 82%. ▪ A total of 20,064.9 metric tons of coffee was exported, achieving 83.7% of the set targets. ▪ The revenue generated from coffee exports reached USD 115,920,666 Rwf, exceeding the set targets at 139.6%. ▪ Coffee farms utilized 3,860,450 kilograms of mineral fertilizer and 18,013 liters of pesticides to manage pests and diseases. ▪ During the fiscal year 2022/23, an additional 2,385 hectares were planted with coffee, bringing the total coffee cultivation area to 42,229 hectares. ▪ Among various coffee types, fully washed coffee now constitutes 78.3% of the total. ▪ Rwandan coffee was showcased and presented at numerous international events, including Salon International de l'Agriculture, the Amsterdam Coffee Festival, the World Coffee Producers Forum, the African Fine Coffee Association, the Specialty Coffee Association of America (SCAA), the World of Coffee in Greece, Coffee Cupping in the Netherlands, the Made in Rwanda Expo in Stockholm, and the Specialty Coffee and Exhibition in 2022. ▪ 18,368 kilograms of tubing were allocated to 14 companies and cooperatives to produce a total of 6,430,000 coffee seedlings. <p>Key challenges faced:</p> <ul style="list-style-type: none"> - Increased aging coffee trees that affecting productivity per tree hence less exports - Less inputs (Fertilizer and pesticides) applied in coffee plantations due to low budget - Changes in weather

S/N	Project Basic Information	Details of the project progress
	<p>Project name: Commodity chain programme/ Horticulture intensification</p> <p>Location: Bugesera, Gasabo, Kamonyi, Karongi, Nyanza, Musanze, Nyagatare, Ngoma, Rwamagana, Rusizi, Gakenke, and Muhanga</p> <p>FY2022/23 Revised Budget: 146,783,421</p> <p>Project objectives: The primary objective is to enhance the efficiency, productivity, and sustainability of horticultural activities, thereby contributing to exports, and income generation. This intends to address horticultural practices often faced such as low yields, limited access to markets, and unsustainable resource use</p> <p>Key Outputs:</p> <ul style="list-style-type: none"> - Increased Productivity by implementing advanced cultivation techniques, improved crop varieties, and efficient resource management to boost yields and output. - Enhanced quality focused on quality control measures of produced high-value, disease-resistant, and visually appealing horticultural products. - Accessed markets through facilitated access to international markets for horticultural producers and exporters, thereby increased income opportunities for farmers and stakeholders. <p>Annual targets</p> <ul style="list-style-type: none"> - Boost horticulture export volume for fruits and vegetables from 15,804MT to 26,055MT. - Grow revenues from fruit and vegetable exports from USD 28.79M to USD 39.2M. - Enhance traceability systems for 50 export farms to ensure top-quality produce. - Aid 4 commercial producers and exporters in meeting market standards. - Back e-soko plus for horticulture exports. - Arrange commercial missions for horticulture exports in Europe, the USA, and the UAE, including market research activities. - Conduct pests and diseases surveillance and interventions for farms under horticulture production for export provision of chili farmers training and related tools for IPM for disease control 	<p>Annual budget spending: 145,004,968</p> <p>FY 2022-23 annual achievements against targets:</p> <ul style="list-style-type: none"> ▪ 74,488.5 MT of horticulture products were exports ▪ USD 58.169 Million were generated from horticulture products exports ▪ 38 avocado farms were identified, mapped, and given codes for ensuring quality ▪ 8 companies received assistance in meeting market requirements, with three of them being Garden Fresh, Sunripe Ltd, and Proxy Fresh, receiving support to comply with the Global GAP certification program. Additionally, five other companies, namely Tropi Wanda, Proxifresh, Souk, Garden Fresh, and Afrifood, were aided in optimizing residue level testing for their products. ▪ The e-soko platform's business plan has been presented, incorporating feedback, and is now poised for launch. Currently, the market pricing aspect is operational, and NAEB has requested MINAGRI to oversee the market linkage component as well. ▪ Horticultural products were displayed and featured at events such as Salon International de l'agriculture, Fruit logistica, SWEACC exhibition and conference, IFTEX, AgriAfrica Expo, Made in Rwanda Expo in Stockholm, The fruit attraction trade fair, and IFTF. ▪ Pest and disease surveillance occurred twice, with the first focusing only on chili crops, while the second encompassed chili, Avocado, and Passion fruit. <p>Key challenges faced:</p> <ul style="list-style-type: none"> - The sector that's not well coordinated - Postharvest infrastructures that are still low - Use of irrigation that still limited

S/N	Project Basic Information	Details of the project progress
3	<p>Project name: Flower Park Construction</p> <p>Location: Rwamagana, Muhanga, Gasabo, Musanze, and Muhanga</p> <p>FY2022/23 Revised Budget: 1,400,000,000</p> <p>Project objectives: Develop floriculture sector for export growth and diversification.</p> <p>Key Outputs:</p> <ul style="list-style-type: none"> - Increased number of Hectares planted on flowers - Increased exported flower stems and generated revenues <p>Annual targets</p> <ul style="list-style-type: none"> - Increase flower production to 57,486,050 stems and exports to USD 10,920,000 in 2022/2023 - Construct Greenhouses on new 2.25 HA remaining on phase 	<p>Annual budget spending: 1,400,000,000</p> <p>FY 2022-23 annual achievements against targets:</p> <ul style="list-style-type: none"> ▪ Phase IV leveling tasks are nearly finished at 98% completion. In this phase, 8 greenhouses have been built, with 6 of them fully completed and 2 partially done. Out of the planned 11.6 hectares for planting in Phase IV, 8 hectares have been completed so far. ▪ USD 4,535,223 was generated from 845,848 Kg of exported flowers. Compared to targets it was achieved at 41.5% ▪ 110 Ha were planted with both summer and rose flowers <p>Key challenges faced:</p> <ul style="list-style-type: none"> - Fall in market especially from Netherlands - Reduced actors in summer flower plantations for exports
4	<p>Project name: Export Logistics Development</p> <p>Location: Kicukiro</p> <p>FY2022/23 Revised Budget: 444,535,429</p> <p>Project objectives: Logistic Infrastructures Developed</p> <p>Key Outputs:</p> <p>Annual targets</p> <ul style="list-style-type: none"> - Maintenance of Pack house, Cold rooms, Color sorter machine and 2 cold trucks) - Purchase one cold truck for transport of fresh produce - Rehabilitate 1 coffee warehouse and Park Yard (Phase II) in Gikondo sector in Kigali to increase its efficiency 	<p>Annual budget spending: 412,935,429</p> <p>FY 2022-23 annual achievements against targets:</p> <ul style="list-style-type: none"> ▪ The tender for upgrading the NAEB coffee sorting warehouse was canceled because it will now be executed by the Reserve Force. ▪ Performed maintenance, repairs, and calibration on 11 NAEB cold rooms, pack houses, a laboratory, 2 color sorting machines, and 2 cold trucks. This was done on a quarterly basis. ▪ The evaluation of the tender for the procurement of a cold truck for fresh produce revealed that none of the bidders met the responsiveness criteria. <p>Key challenges faced:</p> <ul style="list-style-type: none"> - Cold rooms that aren't used at full capacity

S/N	Project Basic Information	Details of the project progress
5	<p>Project name: Sericulture Development</p> <p>Location: Musanze, Muhanga, Ngororero, Gicumbi, Kamonyi, Ruhango, Huye, Nyanza, Rulindo, Gatsibo, Rwamagana, Rutsiro, Nyamasheke, Kirehe, Gakenke, Rusizi, and Gasabo</p> <p>FY2022/23 Revised Budget: 173,160,633</p> <p>Project objectives: Enhance production of increased volumes of high-quality silk leading to increased exports, employment opportunities and increased farmers' incomes</p> <p>Key Outputs:</p> <ul style="list-style-type: none"> - Enhanced income and livelihoods for sericulture farmers. - Promotion of sustainable sericulture practices. - Skills development and capacity building in sericulture. - Improved market access and value chain development. <p>Annual targets</p> <ul style="list-style-type: none"> - Support production, rearing and distribution of 4,000 young silkworm to farmers for cocoons production - Acquire materials, tools, equipment and other agricultural inputs for silkworm eggs production in 6 different sericulture centres - Support maintenance and management of 6 cocoons production centres (CPCs) 	<p>Annual budget spending: 168,419,845</p> <p>FY 2022-23 annual achievements against targets:</p> <ul style="list-style-type: none"> ▪ Farmers and CPCs successfully raised 798.5 silkworm boxes, resulting in a fresh cocoon production of 13.2 metric tons. ▪ A variety of materials in 35 different types were provided, along with the distribution of tools to CPCs and Egg Production Centers, aimed at bolstering egg production and the rearing of silkworms. ▪ The management of Cocoons Production Centres (CPCs) in Karongi, Gatsibo, Nyanza, Mulindi, Rushashi, and Rusizi involved overseeing tasks such as maintaining mulberry plantations, offering technical support to laborers involved in silkworm rearing, and drying fresh cocoons. These activities were crucial before delivering the cocoons to the Kigali Silk Factory for storage. <p>Key challenges faced:</p> <ul style="list-style-type: none"> - Lack of an investor to run the sector in support of the GoR
6	<p>Project name: Kigali Wholesale Market</p> <p>Location: Gasabo</p> <p>FY2022/23 Revised Budget: 2,605,000,000</p> <p>Project objectives: Have a well-equipped fresh produce modern market</p> <p>Key Outputs:</p> <p>Annual targets</p> <ul style="list-style-type: none"> - Acquire land for Kigali Wholesale Market construction through expropriation - Organize meetings resources mobilization to construct KWSM. 	<p>Annual budget spending: 455,324,085</p> <p>FY 2022-23 annual achievements against targets:</p> <ul style="list-style-type: none"> ▪ Out of 101 member files evaluated for expropriation, 78 were signed and sent to NAEB for payment, with 50 already paid, 28 in payment preparation, and 23 still with C.O.K. The total expropriation cost is projected to be 3.293 Bn Rwf, resulting in a budget gap of 2.128 Bn Rwf for resource mobilization. ▪ The activity for resource mobilization is expected to be done after securing the land <p>Key challenges faced:</p> <ul style="list-style-type: none"> - Resources that aren't enough. Hence need of resource mobilization - Haven't acquired the whole land yet

S/N	Project Basic Information	Details of the project progress
7	<p>Project name: Agricultural Mechanization Programme</p> <p>Start date: 01/07/2010</p> <p>End date: 30/06/2023</p> <p>Location: Countrywide</p> <p>FY2022/23 Revised Budget: 216,191,104</p> <p>Project objectives:</p> <p>The objective of the project is to promote efficient agricultural practices that will guarantee food security, provide employment for the citizens, raw material for all agro-based industries as well as increasing exports.</p> <p>Key Outputs:</p> <ul style="list-style-type: none"> - Number of existing fleet of Farm Machineries maintained on time - Ha of area under mechanization: 2,000 	<p>Annual budget spending: 202,495,628 = 94%</p> <p>FY 2022-23 annual achievements against targets:</p> <ul style="list-style-type: none"> ▪ Land mechanized increased to ha72,013 ha ▪ Mechanized farm operations stand at 42% ▪ 10 farm machinery located at different RAB station have been maintained and repaired ▪ 2,251 farmers, cooperative and companies acquired farm machinery through RAB 's grant. <p>Challenges: For some tractors, there are no spare parts available on the local market and this affect maintenance of those machines</p> <p>Photos for implemented activities</p>
8	<p>Project name: The Project for Valorization of Rurambi Irrigation Scheme in Bugesera</p> <p>Start date: 01/07/2015</p> <p>End date: 30/06/2023</p> <p>Location: Bugesera</p> <p>FY2022/23 Revised Budget: 770,415,148</p> <p>Project objectives: The objective of the project is to rehabilitate the scheme and increase Rice Productivity through improvement of topographical status of land.</p> <p>Key Outputs:</p> <ul style="list-style-type: none"> - Maintenance of hillside irrigation schemes 	<p>Annual budget spending: 762,662,046 = 99%</p> <p>FY 2022-23 annual achievements against targets:</p> <ul style="list-style-type: none"> ▪ 850 Ha of hillside irrigation schemes were maintained

S/N	Project Basic Information	Details of the project progress
9	<p>Project name: One Cows per Family (GIRINKA)</p> <p>Start date: 30/07/2006</p> <p>End date: 30/06/2024</p> <p>Location: Country wide</p> <p>FY2022/23 Revised Budget: 20,000,000</p> <p>Project objectives: Access of poor families to livestock through Girinka Program increased</p> <p>Key Outputs: Cows distributed to poor families</p> <p style="text-align: center;">Technical guidelines produced</p>	<p>Annual budget spending: 18,000,000 = 90%</p> <p>FY 2022-23 annual achievements against targets:</p> <ul style="list-style-type: none"> ▪ Elaborated technical specifications ▪ Identification of beneficiaries ▪ ToRs developed for heifer ▪ Tendering process is done ▪ Distribution of 24,036 heifers <p>Challenges: the unites price for one heifer is continuously increasing</p>
10	<p>Project name: Aquaculture and fisheries development</p> <p>Start date: 01/07/2015</p> <p>End date: 30/06//2024</p> <p>Budget allocated 2022/2023: 986,592,874</p> <p>Main objective of the Project:</p> <ul style="list-style-type: none"> * To increase annual fisheries production * Increase the per capita consumption from less than 2kg/per/year to 10.2 kg/per/year * Creating nearly 400,000 jobs along the whole value chain * Raise the contribution of the fisheries and aquaculture to agricultural GDP <p>Key Output Indicators for 2022-2023 FY:</p> <ul style="list-style-type: none"> * MT of fish produced * Number of fingerlings produced (Millions) * Number of Innovative Technology developed research on aquaculture and fisheries * Number of Fingerlings Restocked in Lake and dams * Number of field follow up conducted to disseminate extension services to farmers and fisher 	<p>Annual budget spending: 969,714,760= 98%</p> <p>FY 2022-23 annual achievements against targets:</p> <ul style="list-style-type: none"> ▪ Fish production of 46,495 MT ▪ 5 (five) Innovative Technology developed research on aquaculture and fisheries ▪ More than 8, 339,598 Fingerlings Restocked in Lake and dams

S/N	Project Basic Information	Details of the project progress
11	<p>Project name: LIVESTOCK INFRASTRUCTURE SUPPORT PROGRAM (LISP) Start date: 01/07/2015 End date: 30/06/2024</p> <p>Location: Eastern Province</p> <p>Budget allocated 2022/2023: 1,274,338,643</p> <p>Main objective of the Project: Dairy supply chain potential in support to a new skimmed Milk Powder</p> <p>Key Output Indicators for 2022-2023 FY:</p> <ul style="list-style-type: none"> * Number of new MCCs constructed * Number of MCC Acquire renewable solar energy * Number of storage reserve facilities constructed for raw material and by products local available for cattle feeding * Number of technologies/tools/machineries acquired for forage harvesting and conservation * Number of milk testing instruments and kits acquired: Preparation ToRs and Launch of the tender * Number of MCCs supplied with clean water * Number of milk collection traders registered 	<p>Annual budget spending: 98,5817.667 = 77%</p> <p>FY 2022-23 annual achievements against targets:</p> <ul style="list-style-type: none"> * A total of 74 milk collection traders were registered * 7 MCCs acquired renewable solar energy * Storage reserve facilities were constructed for raw material and by products level available for cattle feeding * 20 MCCs have acquired milk testing equipment * 500 tsetse traps were supplied and installed in Eastern Province <p>Challenges:</p> <p>Several activities were canceled due to budget shortage</p>
12	<p>Project name: Development of efficient and inclusive market-systems for value chains of poultry and pig industries under ENABEL funds</p> <p>Start date: 2020/2021 End date: 2022/2023</p> <p>Budget allocated 2022/2023: 701,161,077</p> <p>Location: Musanze,Rulindo,Rubavu,Rusizi,Gisagara,Nyamagabe,Muhanga,Gicumbi, Bugesera,Rwamagana,Kayonza,Ngoma,kirehe,Nyagatare,gatsibo, and kamonyi</p> <p>Main objective of the Project:</p> <ul style="list-style-type: none"> * Affordable and quality feed, which includes locally sourced soya and maize ingredients supplied by the feed industry 	<p>Annual budget spending: 668,805,000 = 95%</p> <p>FY 2022-23 annual achievements</p> <ul style="list-style-type: none"> * At least 7500 farmers in groups were linked to feed companies and 114 farmer facilitators graduated * 205 poultry facilitators were visited and coached and 12,300 farmers in their grouped were assisted while 205 farmer’s facilitators have graduated * 95 pig facilitators with at least their 190 groups formed composed by at least 5700 group members were assisted and 95 farmer facilitators graduated * 4 technologies evaluated and disseminated (Cassava peels, black soldiers, Hydroponics, Sweet potatoes.)

S/N	Project Basic Information	Details of the project progress
	<ul style="list-style-type: none"> * Productivity and profitability in poultry and pig value chains increased * Set Up of research a livestock research funds <p>Key Output Indicators and target for Q1 2022-2023 FY:</p> <ul style="list-style-type: none"> * Number of maize and soybean trained farmers assisted: 7614 * Number of poultry trained farmer through FFS approach assisted: 10455 * Number of pigs trained farmers through FFS approach assisted: 5795 * Number of pig and poultry nutrition technologies evaluated and disseminated: 3 * Number of sustainable genetic improvement technologies evaluated and disseminated: 3 * Number of poultry and pigs' disease diagnostics done: 5 	<ul style="list-style-type: none"> * 3 technologies were evaluated (Boar semen processing and evaluation; Pig artificial insemination and AI centers; Ultrasound machine (UM) for pregnancy facility in pigs) * Five public servant technician and 20 private veterinaries were trained in diseases diagnostics for poultry and pigs
13	<p>Project Name: Technology development for enhancement of food safety and Value addition in Agriculture</p> <p>Start date: 10/07/2021</p> <p>End date: 30/06/2024</p> <p>Budget allocated 2022/2023: 241,218,662</p> <p>Location: Country wide</p> <p>Main objective of the Project:</p> <p>Post-harvest losses reduced and Quality of production improved for crops and access to market of agriculture commodities under LUC sites are facilitated</p> <p>Key Output Indicators and target for Q1 2022-2023 FY:</p> <ul style="list-style-type: none"> *Number of sheeting/tarpaulins purchased * Number of temporary shelters mobilized * Quantity (Mt) dried by drying machines * Number of LUC sites mobilized on improved harvesting and post harvesting handling good practices 	<p>Annual budget spending: 229,841,566= 95%</p> <p>FY 2022-23 annual achievements</p> <ul style="list-style-type: none"> * 3,500 temporary shelters were mobilized * More than 8000 MT were dried by drying machines * At least 4 Radio and TV spots were produced and disseminated * At least 550 LUC sites were mobilized on improved harvesting and post harvesting handling good practices * At least 3 fruits and vegetable drying machines were acquired (Tomatoes, Chili, pineapple) * A report on Harvest and post-harvest losses calculation for Maize, Rice, Carrots, Onions and tomatoes were produced

S/N	Project Basic Information	Details of the project progress
	<ul style="list-style-type: none"> * Number of fruits and vegetable drying machines acquired (Tomatoes, Chili, pineapple) * Harvest and post-harvest losses calculation on Maize, Rice, Carrots, Onions and tomatoes * Number of LUC sites linked to markets for CIP crops 	
14	<p>Project name: Sustainable Agricultural Intensification and Food Security Project (SAIP)</p> <p>Location:</p> <ul style="list-style-type: none"> ▪ Eastern Province: Kayonza, Rwamagana, Gatsibo and Ngoma ▪ Southern Province: Nyanza ▪ Western province: Karongi, Rutsiro and Nyabihu ▪ Northern Province: Rulindo <p>FY2022/23 Revised Budget: 10,684,283,969 Frw</p> <p>Project objectives:</p> <p>To increase agricultural productivity, market access, and food security of the targeted beneficiaries in the project areas.</p> <p>Key Outputs:</p> <ul style="list-style-type: none"> ▪ Producer-based organizations supported by GAFSP (number): 2,397 organizations ▪ Increase in annual net revenues made by beneficiary cooperatives (Percentage): 50% ▪ Farmers reached with agricultural assets or services (Number): 45,688 households ▪ People receiving improved nutrition services and products (Number): 230,000 people ▪ Area provided with new irrigation or drainage services (Ha): 1,200 ha ▪ Area provided with improved irrigation or drainage services (Ha): 1,700 ha 	<p>Annual budget spending: 9,781,069,539 Frw</p> <p>FY 2022-23 annual achievements against targets:</p> <ul style="list-style-type: none"> ▪ 61.4 ha out of 55 ha of Irish Potatoes Model farms established (111.6%) ▪ 348 ha out of 405 ha of agriculture mechanization on consolidated land (85.9%) ▪ 127 ha out of 120 ha of Chili Model farms established (105.8%) ▪ 64 ha out of 200 ha of Tomatoes Model farms established (32%) ▪ 47 ha out of 63 ha of onions Model farms established (74.6%) ▪ 107.8 ha out of 119 ha of French Beans Model farms established (90.5%) ▪ 95 ha out of 95 ha of Tree Tomato Model farms established (100%) ▪ 5 ha out of 5 ha of Passion Fruit Model farms established (100%) ▪ 95ha out of 95ha of avocado fruits model farm established (100%) ▪ 9,582.4 ha out of 10,808.5 ha planted during season A 2023 (88.6%) ▪ 9,457.1 out of 10,808.5 ha planted during season A 2023 (87%) ▪ 571.75 tons out of 642 Tons of lime distributed (89%) ▪ 13,709.2 Tons out of 12,840 Tons of compost distributed (106.7%) ▪ 9,800 chicken out of 9,480 chicken to be distributed (103.3%) ▪ 17,910 out of 24,000 mushroom tube distributed (74.6%) ▪ 300,000 out of 300,000 cuttings of orange fleshed sweet potatoes distributed (100%) ▪ 318,700 out of 297,000 Avocados seedlings planted (107.3%) ▪ 312,273 out of 500,000 Tree tomatoes seedlings planted (62.4%) ▪ 167,530 out of 100,000 Passion fruits seedlings planted (167.5%) ▪ 828,428 out of 400,000 Agroforestry trees planted (202%) ▪ 506 ha out of 500 Ha of Improvement of water use efficiency in existing schemes established (101.2%) ▪ 553 Ha out of 300 ha of SSIT established (184.3%) ▪ 1,167,056,495 Frw out of 1,500,000,000 Frw disbursed through

S/N	Project Basic Information	Details of the project progress
	<ul style="list-style-type: none"> ▪ Farmers benefiting from the project supported small-scale irrigation interventions (Number): 2,400 farmers ▪ Increment of Water Use Efficiency (Percentage): 75% ▪ Users paying water fees to the water users associations (Number): 9,330 users ▪ Amount of credit mobilized by farmers and farmers' organization (USD): 450,000 USD ▪ Volume of agricultural production processed by post-harvest facilities established with project support (Metric ton): 23,088 Metric tons ▪ Farmers organization - buyer linkages established (Number): 52 linkages ▪ Value of contracts/agreements negotiated through linkages established (USD): 1,970,000 USD ▪ Knowledge products produced by the project (Number): 20 knowledge products. <p>Annual targets</p> <ul style="list-style-type: none"> ▪ 55 ha of Irish potatoes on consolidated land (Model farms) ▪ 405 ha of agriculture mechanization on consolidated land ▪ 120 ha of Chili on consolidated land (Model farms) ▪ 200ha of Tomatoes on consolidated land (Model farms) ▪ 63ha of onions on consolidated land (Model farms) ▪ 119 ha of French beans on consolidated land (Model farms) ▪ 95 ha of Tree tomato on consolidated land (Model farms) ▪ 5 ha of Passion fruit on consolidated land (Model farms) ▪ 95ha of avocado fruits on consolidated land (model farm) ▪ Season A and B 2023 implementation: 10,808.5 ha for each season. ▪ 642 Tons Distribution of lime ▪ 12,840 Tons of compost ▪ 9,480 chicken to be distributed ▪ 24,000 mushroom tubes to be distributed ▪ 300,000 cuttings of orange fleshed sweet potatoes ▪ 297,000 Avocadoes to be planted ▪ 500,000 Tree tomatoes, ▪ 100,000 Passion fruits ▪ 400,000 Agroforestry trees planted ▪ 500 Ha of Improvement of water use efficiency in existing schemes 	<p>Matching grant program (77.8%)</p> <ul style="list-style-type: none"> ▪ 2 out of 2 maize processing plants completed (100%) ▪ 1 out of 1 fruit processing plant in Ngoma is under construction (70%) ▪ 10 out of 10 greenhouses completed (100%) <p>Key challenges faced:</p> <ul style="list-style-type: none"> ▪ Beneficiaries under matching grant who delayed to pay their contribution to enable the project to pay its contribution for supported business proposals. ▪ Drought and rains that delayed during season A 2023 affecting the rain fed areas. <p>General implementation progress in %: 95%</p>

S/N	Project Basic Information	Details of the project progress
	<ul style="list-style-type: none"> ▪ 300 ha of SSIT ▪ 1,500,000,000 Frw to be disbursed through matching grant program. ▪ Construction of 2 maize processing plants (70%) ▪ Construction of fruit processing plant in Ngoma (70%) ▪ Construction of 10 greenhouses 	
15	<p>Project name: NATIONAL STRATEGIC GRAIN RESERVE</p> <p>Location: Kicukiro, Nyagatare, Nyanza, Nyabihu & Nyamagabe</p> <p>FY2022/23 Revised Budget: 6,569,938,154 Frw.</p> <p>Project objectives: The objective of the project is to ensure national food security, mitigate the impacts of potential shocks to the food supply, and reduce malnutrition and hunger among the population, while avoiding market distortion. To ensure food security for all Rwandese, tracking and managing the availability and accessibility of food in the country is crucial. This includes strengthening the Rwandan Strategic Grain Reserve and management systems to respond to food security emergencies.</p> <p>Key Outputs:</p> <ul style="list-style-type: none"> - Quantity of food commodities in the Strategic stocks increased. - Capacity of storage infrastructure increased <p>Annual targets</p> <ul style="list-style-type: none"> - 6,120 MT of maize stored as Strategic Grain Reserve. - 3,500 MT of beans stored as Strategic Grain Reserve. - Installation done of metallic silos machines and equipment at 50% 	<p>Annual budget spending: 9,360,499,679 Frw.</p> <p>FY 2022-23 annual achievements against targets:</p> <ul style="list-style-type: none"> ▪ 1,673.761 MT of maize stored as Strategic Grain reserve (27%). ▪ 6,533.290 MT of beans have been stored as Strategic Grain Reserve (186.6%). ▪ The rate of execution works for the Civil works contractor is at 100%. The works for electromechanical works have started and are now at supplying level (22%) <p>Key challenges faced:</p> <ul style="list-style-type: none"> ▪ The disaster & price fluctuation challenges have affected some districts across the country which resulted in food shortages in some households. The prices of some food items such as grains have been going up leading to concerns on food security and affordability in the country <p>Corrective actions:</p> <ul style="list-style-type: none"> ▪ 1,491.081 MT of beans, 2,217.626 MT of maize, 395.05 MT of maize flour & 207.035 MT of rice have been dispatched to districts and MINEMA for 44,359 households affected by disaster or climate change. ▪ Due to Prices fluctuation challenges in the country, MINAGRI through NSGR has dispatched 4,975.912 MT of maize grains to different companies (MAHWI: 2,669 MT, MINIMEX: 1,165.8 MT, Farmers’Kawunga: 350 MT, NSERICO: 300 MT, NAFACO Ltd: 40 MT, MERRY: 35.112 & 416 MT to TSC) to avail maize flour for stabilizing food price on local market. <p>General implementation progress is above 100%:</p>

S/N	Project Basic Information	Details of the project progress
16	<p>Project name: Sustainable Agricultural Productivity and Market linkage Project (SAPMP)</p> <p>Location:</p> <ul style="list-style-type: none"> - Southern Province: Gisagara and Nyanza <p>FY2022/23 Revised Budget: 1,162,675,578 Frw</p> <p>Project objectives:</p> <p>SAPMP development objective is to contribute to; Sustainable Development Goal 2.3 By 2030, double the agricultural productivity and incomes of small-scale food producers, in particular women, indigenous peoples, family farmers, pastoralists and fishers, including through secure and equal access to land, other productive resources and inputs, knowledge, financial services, markets and opportunities for value addition and non-farm employment.</p> <p>Key Outputs:</p> <ul style="list-style-type: none"> ▪ Total beneficiaries to be reached: 3,400 Households ▪ Land husbandry activities (Terraces): 100 ha ▪ Land husbandry activities (Ditches): 300 ha ▪ Afforestation: 100 ha ▪ Formation of cooperatives: 5 cooperatives ▪ Construction of post-harvest facilities_ Storages: 2 storages ▪ Construction of drying grounds: 4 drying grounds ▪ Nyiramageni marshland rehabilitation: 600 ha <p>Annual targets</p> <ul style="list-style-type: none"> ▪ 1 irrigation and drainage design study completed ▪ Carry out marshland rehabilitation and development works on 50 ha ▪ Implementation of season A and B 2023 (250 ha for each season) ▪ 2,700 tons of compost to be distributed ▪ 75,000 Avocadoes seedlings to be planted ▪ 10,000 seedlings of tree tomatoes to be planted ▪ 10,000 seedlings of passion fruits to be planted ▪ 2 rice storages to be constructed ▪ 4 rice drying grounds to be constructed 	<p>Annual budget spending: 915,111,603 Frw</p> <p>FY 2022-23 annual achievements against targets:</p> <ul style="list-style-type: none"> ▪ 1 irrigation and drainage design study completed at 70% ▪ Marshland rehabilitation: 0%. ▪ 250 ha out of 250 ha of land cultivated and planted during season A 2023 (100%) ▪ 220 ha out of 250 ha of land cultivated and planted during season A 2023 (88%) ▪ 2,700 tons out of 2,700 tons of compost distributed (100%) ▪ 75,000 out of 75,000 Avocadoes seedlings planted (100%) ▪ 10,000 out of 10,000 seedlings of tree tomatoes planted (100%) ▪ 10,000 out of 10,000 seedlings of passion fruits planted (100%) ▪ 2 out of 2 rice storages constructed and completed (100%) ▪ 4 out of 4 rice drying grounds constructed and completed (100%) <p>Key challenges faced:</p> <ul style="list-style-type: none"> ▪ Delay to start the works for Rehabilitation and development of Nyiramageni marshland which was originated from the delay arrival of Korea expert (Project Management Consultants) <p>General implementation progress in %: 35%</p>

S/N	Project Basic Information	Details of the project progress
17	<p>Project name: Sustainable Agricultural Productivity and Market linkage Project (SAPMP)</p> <p>Location:</p> <ul style="list-style-type: none"> - Southern Province: Gisagara and Nyanza <p>FY2022/23 Revised Budget: 1,162,675,578 Frw</p> <p>Project objectives: SAPMP development objective is to contribute to; Sustainable Development Goal 2.3 By 2030, double the agricultural productivity and incomes of small-scale food producers, in particular women, indigenous peoples, family farmers, pastoralists and fishers, including through secure and equal access to land, other productive resources and inputs, knowledge, financial services, markets and opportunities for value addition and non-farm employment.</p> <p>Key Outputs:</p> <ul style="list-style-type: none"> ▪ Total beneficiaries to be reached: 3,400 Households ▪ Land husbandry activities (Terraces): 100 ha ▪ Land husbandry activities (Ditches): 300 ha ▪ Afforestation: 100 ha ▪ Formation of cooperatives: 5 cooperatives ▪ Construction of post-harvest facilities_Storages: 2 storages ▪ Construction of drying grounds: 4 drying grounds ▪ Nyiramageni marshland rehabilitation: 600 ha <p>Annual targets</p> <ul style="list-style-type: none"> ▪ 1 irrigation and drainage design study completed. ▪ Carry out marshland rehabilitation and development work on 50 ha ▪ Implementation of season A and B 2023 (250 ha for each season) ▪ 2,700 tons of compost to be distributed. ▪ 75,000 Avocadoes seedlings to be planted. ▪ 10,000 seedlings of tree tomatoes to be planted. ▪ 10,000 seedlings of passion fruits to be planted. ▪ 2 rice storages to be constructed. ▪ 4 rice drying grounds to be constructed 	<p>Annual budget spending: 915,111,603 Frw</p> <p>FY 2022-23 annual achievements against targets:</p> <ul style="list-style-type: none"> ▪ 1 irrigation and drainage design study completed at 70% ▪ Marshland rehabilitation: 0%. ▪ 250 ha out of 250 ha of land cultivated and planted during season A 2023 (100%) ▪ 220 ha out of 250 ha of land cultivated and planted during season A 2023 (88%) ▪ 2,700 tons out of 2,700 tons of compost distributed (100%) ▪ 75,000 out of 75,000 Avocadoes seedlings planted (100%) ▪ 10,000 out of 10,000 seedlings of tree tomatoes planted (100%) ▪ 10,000 out of 10,000 seedlings of passion fruits planted (100%) ▪ 2 out of 2 rice storages constructed and completed (100%) ▪ 4 out of 4 rice drying grounds constructed and completed (100%) <p>Key challenges faced:</p> <ul style="list-style-type: none"> ▪ Delay to start the works for Rehabilitation and development of Nyiramageni marshland which was originated from the delay arrival of Korea expert (Project Management Consultants) <p>General implementation progress in %: 35%</p>

S/N	Project Basic Information	Details of the project progress
18	<p>Project name: Commercialization and De-Risking for Agriculture Transformation</p> <p>Location:</p> <ul style="list-style-type: none"> ▪ Countrywide for agriculture finance and insurance ▪ Sites specific for Irrigation and Land husbandry (Muhanga, Ruhango, Nyanza, Huye, Nyaruguru, Gisagara, Kayonza, Bugesera, Gatsibo, Nyagatare, Kirehe, Gicumbi, Nyamasheke, Rusizi, Gasabo and Kicukiro). <p>FY2022/23 Revised Budget: 10,089,198,107 Frw</p> <p>Project objectives:</p> <p>Project Development Objective (PDO) are to increase the use of Irrigation and Commercialization in supported Value Chains and access to Finance among Producers and Agribusiness Firms</p> <p>Key Outputs:</p> <ul style="list-style-type: none"> ▪ Area under irrigation increased: 17,673 ha ▪ Area covered with land husbandry technologies increased: 10,986 ha ▪ Households to benefit from irrigation and Land husbandry: 235,977 ▪ Area (Ha) of crop insured increased: 217,500 ha ▪ Number of livestock insured increased: 187,500 Ha ▪ Households to benefit from Crop Insurance: 575,000 ▪ Households to benefit from Livestock Insurance: 75,000 ▪ Households to benefit from Agricultural Finance: 2,235 <p>Annual targets</p> <ul style="list-style-type: none"> ▪ 2,025 Ha of terraces to be constructed. ▪ 2,477 Ha of Anti-erosion ditches to be constructed 	<p>Annual budget spending: 5,684,088,115 Frw</p> <p>FY 2022-23 annual achievements against targets:</p> <ul style="list-style-type: none"> ▪ 408.2 ha out of 2,025 Ha of terraces to be constructed (20.1%) ▪ 1,331.1 ha out of 2,477 Ha of Anti-erosion ditches to be constructed (53.7%) <p>Key challenges faced:</p> <ul style="list-style-type: none"> ▪ Low up-take of Agriculture Insurance among farmers ▪ Cost for consultancy and works have risen considerably. In some cases, the initial estimated costs have doubled. There is concern that the project might not be able to meet the initial targets <p>General implementation progress in %: 7%</p>

S/N	Project Basic Information	Details of the project progress
19	<p>Project name: Rwanda Dairy Development Project (RDDP)</p> <p>Location</p> <ul style="list-style-type: none"> ➤ Eastern Province: Nyagatare, Gatsibo, Kayonza, and Rwamagana ➤ Southern Province: Ruhango, Nyanza and Huye ➤ Western Province: Rutsiro, Nyabihu, Ngororero and Rubavu. ➤ Northern Province: Musanze, Burera and Gicumbi <p>FY2022/23 Revised Budget: Frw 5,362,502,102</p> <p>The Project Objective</p> <p>The project objective is to increase the dairy sub-sector's competitiveness and profitability through the provision of quality products from small-scale producers to domestic and regional consumers, thus improving their livelihoods, food security and nutrition while building the overall resilience.</p> <p>Key Outputs:</p> <ul style="list-style-type: none"> ➤ Completion works of new bull station premises located in Songa RAB Station/ Huye district. ➤ Forage seeds multiplied and distributed to the farmers ➤ Acquisition and distribution of dam sheets to farmers in Nyagatare, Gatsibo and Kayonza Eastern Province. ➤ Construction and installation of boreholes in Gatsibo District ➤ Support to Public Institutions and Private Sector in milk selling to increase milk consumption ➤ Support the business plans through matching grants <p>Annual targets</p> <ul style="list-style-type: none"> ➤ Completion of construction works of Bull Station located in RAB-Songa Station. ➤ Distribution of forage seeds and other planting materials to farmers for planting an area of 1500 Ha in 14 Districts of RDDP Intervention zones. ➤ Purchase and distribute 400 dam sheets to farmers in Nyagatare, Gatsibo and Kayonza Eastern Province. 	<p>Annual budget spending: Frw 4,588,877,954</p> <p>FY 2022-23 annual achievements against targets:</p> <ul style="list-style-type: none"> ➤ The construction works of Bull Station were completed and the facility start to operate. ➤ Forage seeds and other planting materials were distributed to farmers and an area of 1870 ha established. ➤ 449 dam sheets ponds constructed and installed by farmers in Nyagatare, Gatsibo and Kayonza Districts. ➤ 10 boreholes supported through matching grants were drilled and installed in Gatsibo District. ➤ 18 Milk Coolers purchased through the MoUs between SPIU/RAB and Inyange Industries (12) as well as Nyanza Milk Industries (6) were distributed to Dairy cooperatives. ➤ 65 new inseminators were trained on bovine artificial insemination to ensure proximity of AI service to farmers. ➤ 30 new cooperatives were trained on governance and Financial Management, and 30 existing cooperatives were coached on cooperative management and basic accounting. ➤ 119 milk collectors from 9 milk collection centers of Nyanza, Huye and Ruhango districts were coached, and milk collectors started to screen mastitis when the milk rejected by MCCs in tracing the cause of milk rejection. ➤ 840 Champions trained on Gender Learning System methodology. ➤ The Final Report of Impact Assessment Study was produced and approved by SPIU. <p>Key challenges faced:</p> <ul style="list-style-type: none"> ➤ Failure to realize full beneficiary contributions and this triggers deduction in matching grants that were earlier approved and cancelling part of the matching grants. ➤ Delays of disbursement of matching grants due to slow implementation of some business plans. <p>General implementation progress in %: The overall implementation progress is 90%.</p>

S/N	Project Basic Information	Details of the project progress
	<ul style="list-style-type: none"> ➤ Construction and install 10 boreholes through matching grants in Gatsibo District. ➤ Training of 25 new cooperatives on governance and Financial Management, and coaching of 35 existing cooperatives on Cooperative management and basic accounting. ➤ Coaching of 100 milk collectors on mastitis prevention practices and subclinical mastitis diagnosis ➤ Training of 65 new inseminators on Bovine artificial insemination to ensure proximity of AI service to farmers. ➤ Training of 840 Champions on Gender Learning System methodology ➤ Conduct the Final Impact Assessment Study 	
20	<p>Project name: Kayonza Irrigation and Integration Watershed Management Project-Phase I (KIIWPI).</p> <p>Location</p> <p>Kayonza District of the Eastern Province of Rwanda, in the Sectors of: Gahini, Kabare, Kabarondo, Murama, Murundi, Mwiri, Ndego and Ruramira.</p> <p>FY2022/23 Revised Budget: Frw 3,484,548,998</p> <p>The Project Objective</p> <p>The Project Objective is to improve food security and incomes of 8,143 rural households on a sustainable basis and build their climate resilience KIIWP will improve the resilience of smallholder farmers to droughts and effects of climate change through increased levels of production and productivity of selected food and cash crops, livestock and improved market access and business development.</p> <p>Key Outputs:</p> <ul style="list-style-type: none"> ➤ Completion of construction and installation of 10 boreholes in Mwili, Ndego, Murundi and Gahini Sectors. ➤ Completion of rehabilitation/upgrading of 5 valley tanks/dams in Mwili, Murundi and Gahini Sectors. 	<p>Annual budget spending: Frw 3,294,783,527</p> <p>FY 2022-23 annual achievements against targets:</p> <ul style="list-style-type: none"> ➤ The drilling and installation of 10 boreholes was completed and they are located in in Mwili, Ndego, Murundi and Gahini Sectors of Kayonza District. ➤ The rehabilitation/upgrading of 5 valley tanks/dams was completed and they are located in Mwili, Murundi and Gahini Sectors. ➤ The maintenance of land husbandry works in Kabarondo, Ndego, Murama and Kabare were completed. ➤ The installation of a mini water purification system to valley tanks was completed to ensure clean provision of water for domestic use. ➤ The final report of feasibility Studies for Kanyeganyege and Gishanda Irrigation Schemes were completed and shared with IFAD for disclosure. ➤ The final reports of Environment Social Impact Assessment (ESIA) for Kanyeganyege and Gishanda Irrigation Schemes were completed and shared with IFAD for disclosure. ➤ The final report of the feasibility study of KIIWP – 1, Dam, Diversion, pumped systems & Irrigation Multiple Sites for 5000 ha net Command Area in Eastern Province was completed and shared with IFAD for disclosure. ➤ The final report of Detailed Resettlement Action Plan (RAP) was produced and shared with IFAD for disclosure.

S/N	Project Basic Information	Details of the project progress
	<ul style="list-style-type: none"> ➤ Completion of land husbandry works in Kabarondo, Ndego, Murama and Kabare. ➤ Installation of a mini water purification system to valley tanks to ensure clean provision of water for domestic use and procure, provide water purification tablets to be installed at each valley and water tanks. ➤ Conducting detailed Resettlement Action Plan (RAP). ➤ Undertake Feasibility Studies for Kanyeganyege and Gishanda Irrigation Schemes as well as the Environment Social Impact Assessments (ESIAs). <p>Annual targets</p> <ul style="list-style-type: none"> ➤ Construct and install of 10 solar powered boreholes. ➤ Build/ rehabilitate of 5 Valley tanks/dams ➤ Completion of land husbandry works in Kabarondo, Ndego, Murama and Kabare ➤ Undertake Feasibility Studies for Kanyeganyege and Gishanda Irrigation Schemes. ➤ Undertake Environment Social Impact Assessment (ESIA) for Kanyeganyege and Gishanda Irrigation Schemes. ➤ Undertake the Feasibility Study of KIIWP – 1, Dam, Diversion, Pumped systems & Irrigation Multiple Sites for 5000 ha net Command Area in Eastern Province. ➤ Detailed resettlement action plan conducted ➤ Training and proximity coaching of 39 water users’ organizations. ➤ 305 farmer promoters will be trained ➤ Elaborate the Pest management plans ➤ Train of champions on Gender Action Learning System. ➤ Conduct the outcome survey of the project. 	<ul style="list-style-type: none"> ➤ 39 water users’ organizations were trained on administrative and management, hygiene sanitation, operation and maintenance of valley dams and boreholes. ➤ The final report of the Pest management plans was produced and approved by SPIU. ➤ 254 farmer promoters were trained on Good Practices and we emphasized on participatory extension approach which allow to easily disseminate and exchange of information between farmers and farmer’s organizations ➤ 160 champions (of which the women are 50%) have been trained on Gender Action Learning System(GALS) methodology in all 9 Sectors in Kayonza District. ➤ The Final Report of Outcome survey was produced and approved by SPIU <p>Key challenges faced: The feasibility studies and Environment, Social Impact Assessment (ESIAs) took longer than it was expected due to the approval process.</p> <p>General implementation progress in %: The overall implementation progress is 95%.</p>

S/N	Project Basic Information	Details of the project progress
21	<p>Project name: Kayonza Irrigation and Integration Watershed Management Project-Phase II (KIIWP/II)</p> <p>Location</p> <p>Kayonza District of the Eastern Province of Rwanda, in the Sectors of: Gahini, Kabare, Kabarondo, Murama, Murundi, Mwiri, Ndego and Ruramira.</p> <p>FY2022/23 Revised Budget: Frw 4,071,559,003</p> <p>The Project Objective</p> <p>The objective of the project is to improve food security and income of 40,000 rural households on a sustainable basis and build their climate resilience</p> <p>Key Outputs:</p> <ul style="list-style-type: none"> ➤ Training of farmers on land husbandry guidelines. ➤ Establishment of land husbandry techniques in Kanyeganyege and Gishanda catchments areas including agroforestry trees (Kabarondo, Ruramira and Murama Sectors). ➤ Acquisition of inputs (Lime and compost) for new terraces in Kabarondo, Ruramira and Murama Sectors. ➤ Establishment of grievance redress mechanism committees. ➤ Preparation, production and planting of tree seedlings. ➤ Preparation and production of fruit seedlings for home gardens. ➤ Formation and support operationalization of catchment Committee at District level. ➤ Capacity building of new Farmer Field School (FFS) facilitators on its general approach and methodology and CSA and GAP. ➤ Conduct audit of cooperatives with critical cases. <p>Annual targets</p> <ul style="list-style-type: none"> ➤ Training of 400 Farmers on land husbandry guidelines. ➤ Establishment 350 ha of land husbandry techniques are established in Kanyeganyege and Gishanda catchments areas. 	<p>Annual budget spending: Frw 3,297,437,043</p> <p>FY 2022-23 annual achievements against targets:</p> <ul style="list-style-type: none"> ➤ 400 farmers trained on infrastructure management. ➤ The land husbandry activities have been constructed in Kanyeganyege and Gishanda catchments, the total area was 350 ha of which 130 ha of terraces and 220 ha of ditches and 13569 agroforestry trees planted. Embankments protected with grasses on 315.7 hectares. ➤ Compost samples were taken for laboratory analysis to confirm their quality before the supply at Kayonza District in Murama, Rwinkwavu and Kabare Sectors. after physical checking, 1,642 tons have been received and applied. ➤ The Grievance Redress Mechanism Committees (GRMCs) have been established in 12 zones in Rwinkwavu rice scheme (exploited by INDATWA Kayonza Cooperative) and in Rusera land husbandry site where 26 grievance redress mechanism were established. ➤ The contract for the preparation and planting of 670,000 trees seedlings was signed with MoD/ Reserve Force, and 318,014 pots are well packed and seeds planted directly. The tree seedlings are being maintained in the nursery. ➤ Preparation and production of fruit seedlings is still ongoing and the grafting activity for avocado was completed; Sorting and grading for graded ones is going on. The mango grafting 6,280 seedlings with Tonmy: 4,000 and 2,280 Zillates. ➤ In collaboration with Rwanda Water Board, a committee for the management of low Akagera catchment was elected, the chairperson is the Vice Mayor in charge Economic Development of Kayonza District and the elected committee is responsible for the establishment of the sub catchment committees. ➤ 288 new FFS facilitators were identified of which 146 facilitators are Female and 142 male. The season long training was started in february 2023. Now the FFS facilitators are ready for scaling the training knowledge to the members of their respective groups. ➤ 288 new FFS facilitators elected for different staple crops in 9 sectors of Kayonza District have been received initiation training of 3 days to be

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	<ul style="list-style-type: none"> ➤ Acquisition of 875 Metric tons of lime and 3500 Metric tons of compost and distributed to farmers for new terraces in Kabarondo, Ruramira and Murama Sectors. ➤ Grievance redress mechanism committees established. ➤ Preparation of 670,000 tree seedlings ➤ Preparation and production of 100,000 fruits seedlings prepared. ➤ catchment Committee at District level formed and supported for operational. ➤ Identification and validation of new FFS facilitators. ➤ Train of new 288 Farmer Field School (FFS) facilitators on its general approach and methodology and CSA and GAP. ➤ Acquisition and distribution of orange sweet potato vines. ➤ Acquisition and distribution of agricultural inputs for 100 FFS plots installation. ➤ Conduct audit of 15 cooperatives with critical cases. 	<p>able to follow up FFS technical itineraries to be used during long season training of facilitators.</p> <p>The training topic covered are:</p> <ul style="list-style-type: none"> -Farmer field school concept and field work, fundamental elements, principles of FFS approach and Key steps of FFS implementation -Strategies and methodology used in FFS training -Features of a Farmer Field School (season long session, AESA, Group Dynamics, Special Topics). <ul style="list-style-type: none"> ➤ 23,076,923 potato vine cuttings were distributed and planted by the projects beneficiaries at Ndego Sector. Kayonza District to support the farmers who face the long drought season. ➤ 7 plots of model farms (7ha) have been installed with each model farm is covering 1ha. On other side, 34 demo plots (Covering 81.1 Ares) were installed, but the size of plot depends on the crops and the number of varieties in the experiments. Different crops varieties are under testing their adaptability, resistant to diseases and drought conditions, and their ability to produce high yield. ➤ The audit of 15 cooperatives was done by Rwanda Cooperative Agency “RCA” staff through MoU with SPIU/KIIWP and focused on governance specifically on the compliance to laws and regulations in their decisions making and generally their daily activities of leading committees, the audit also analysed Human resources management systems and proposed measures as well as recommendations. <p>Key challenges faced: Delays in signing the Co-Financing Agreement (FA) with the Government of Spain (GoS) has affected the project implementation. The lack of availability of Spanish Fund has delayed the approval of the AWPB as well as the Procurement Plan by IFAD due to the fact that some planned activities were jointly financed by both IFAD and GoS.</p> <p>General implementation progress in %: The overall implementation progress is 90%.</p>

S/N	Project Basic Information	Details of the project progress
22	<p>Project name: Partnership for Resilient and Inclusive Small Livestock Markets (PRISM Project)</p> <p>Location</p> <p>15 Districts, distributed across the Northern, Southern and Western Provinces of Rwanda as follows: North (Gicumbi, Gakenke, Rulindo Burera and Musanze), West (Nyamasheke, Karongi, Ngororero, Rutsiro and Nyabihu) and South (Nyamagabe, Gisagara, Nyaruguru, Huye, and Ruhango).</p> <p>FY2022/23 Revised Budget: Frw 5,636,149,343</p> <p>The project objective</p> <p>The project objective of the project is to reduce poverty by empowering poor rural men, women and youth to participate in the transformation of the Rwanda agriculture sector and to enhance their resilience. Specifically, the project seeks to increase competitiveness and profitability of the small livestock sector for the provision of quality products from smallholder producers to domestic and regional consumers.</p> <p>Key Outputs:</p> <ul style="list-style-type: none"> ➤ Purchase and distribution of small stocks (chicken and pigs) to famers. ➤ Support farmers in construction of chicken and pigs' houses/Shelters. ➤ Construction of small livestock infrastructures (Proximity veterinary posts, district livestock markets and Pig slaughter slabs) ➤ Support to farmers with fodder grasses & legumes and to establish vegetable and fruit trees. ➤ Purchase and distribute low-cost rainwater harvesting facilities at household level. <p>Annual targets</p> <ul style="list-style-type: none"> ➤ 20,000 chicken (Sasso) are procured and distributed to 2,000 HHs farmers. ➤ 1,000 pigs are procured and distributed to 1,000 HHs farmers. ➤ 2,000 households/farmers are supported in constructing chicken houses. 	<p>Annual budget spending: Frw 5,040,082,540</p> <p>FY 2022-23 annual achievements against targets:</p> <ul style="list-style-type: none"> ➤ 20,870 chicken were purchased and distributed to farmers in 15 districts of PRISM intervention zones. ➤ 102 pigs were purchased and distributed to farmers in Gakenke, Rulindo and Burera districts. ➤ 2,000 households/farmers are supported in constructing chicken houses. ➤ 1,000 households/farmers are supported in constructing pig houses. ➤ 300 low-cost rainwater harvesting facilities purchased and installed at household level. ➤ To ensure the availability of fodder for goats and sheep that will be distributed in June 2023, the project purchased and distributed to farmers 33,750 Kakamega seedlings, 23,080 calliandra trees and 10,670 leuceuna trees. ➤ 10,006 vegetable seeds distributed to farmers such as Amaranthus, Carrots and Beetroot seeds as support to establish vegetable gardens. Each beneficiary was received 6 grams for each type of vegetable seeds and in total 63.795 for each type of vegetable seeds. ➤ The construction of 15 proximity veterinary posts/clinics in collaboration with Reserve Force and SPIU/RAB was completed and handed over to districts. ➤ The rehabilitation and upgrading ten (10) Public Pig slaughter slabs in collaboration with Reserve Force and SPIU/RAB is ongoing and the overall physical progress works of Public Pig slaughter slabs is at 95%. ➤ The construction and upgrading works of fifteen (15) District livestock Markets in collaboration with Reserve Force and SPIU/RAB is ongoing and the overall physical progress works of District livestock markets is at 96%. <p>Key challenges faced:</p> <ul style="list-style-type: none"> - Farmers selling young chickens resulting in the low income to the household. This has been particularly observed in the Southern Province in Ruhango, Gisagara and Nyaruguru districts. - High cost of animal feed due to high global inflation rates that have led to a spike in the cost of animal feed raw materials, thereby increasing the cost of production and reducing farmer revenues.

S/N	Project Basic Information	Details of the project progress
	<ul style="list-style-type: none"> ➤ 1,000 households/farmers are supported in constructing pig houses. ➤ 300 low-cost rainwater harvesting facilities are established at household level ➤ 3,375 HH will be supported with fodder grasses and legumes. ➤ 9,900 Households will be supported to establish vegetable and fruit trees. ➤ 15 proximity vets constructed and operational. ➤ 10 public pig slaughter slabs constructed/rehabilitated and operational. ➤ 15 District livestock markets rehabilitated and operational. 	<ul style="list-style-type: none"> - High mortality rates of chicken experienced in some districts like Ruhango, Musanze, Rutsiro, Rulindo and Nyamasheke due to diseases and adoptability. - Delay in availing of land that meet the land use plan according to the type of infrastructures to be constructed by the project. - Changes of sites for some infrastructures due to nature and topography of the sites, expropriation challenges, sites rejected by RICA for not complying the standard, specifically for slaughter slabs. <p>General implementation progress in %: The overall implementation progress is 90%.</p>