Ministry of Agriculture and Animal Resources

Annual Report FY 2012-2013

Republic of Rwanda

Ministry of Agriculture and Animal Resources

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Acronyms & Abbreviations

AfDB	African Development Bank
ASWG	Agriculture Sector Working Group
CAADP	Comprehensive Africa Agriculture Development Program
CICA	Center for Agricultural Information and Communication
DfID	Department for International Development (UK)
EC	European Commission
EDPRS	Economic Development and Poverty Reduction Strategy
FY	Financial Year
GAFSP	The Global Agricultural & Food Security Program
GDP	Gross Domestic Product
GFI	Immediate Action Irrigation
GoR	Government of Rwanda
GWLM	Gishwati Land and Water Management
Ha	Hectare
IFAD	International Fund for Agricultural Development
KWAMP	Kirehe Community-Based Watershed Management Project
LWH	Land Husbandry and Water Harvesting Project
MCC	Milk Collection Center
MDG	Millennium Development Goals
MINAGRI	Ministry of Agriculture and Animal Resources
MINECOFIN	Ministry of Economic Planning and Finance
MINICOM	Ministry of Trade and Industry
MTEF	Medium-Term Expenditure Framework
M&E	Monitoring and Evaluation
NAEB	National Agricultural Export Board
NEPAD	New Economic Partnership for Africa's Development
NGO	Non-Governmental Organisation
NISR	National Institute of Statistics of Rwanda
PADAB	Projet d'Appui au Developpment Agricole de Bugesera
PADEBL	Projet d'Appui au Developpment d'Elevage Bovin Laitier
PAIGELAC	Projet d'Appui a l'Amenagement Integre et la Gestion des Lacs Interieurs
PDCRE	Projet de Developpement des Cultures de Rente et d'Exportation
PHHS	Post Harvest Handling and Storage
PSTA	Strategic Plan for the Transformation of Agriculture
RAB	Rwanda Agriculture Board
RSSP	Rural Sector Support Project
RwF	Rwandan Francs
SWAp	Sector-Wide Approach
USD	United States Dollars
WUO	Water Users Organisations

Foreword by the Minister of Agriculture and Animal Resources

It gives me great pleasure to present the MINAGRI Annual Report for 2012-2013 to the people of Rwanda, and our development and business partners.

Each year, the Ministry makes great progress across different areas. However, we also continue to face challenges, to both improve domestic food security and to maintain and increase the competitiveness of Rwanda's agricultural products in a challenging global economy. This report outlines the major activities conducted by the Ministry over the last year, and identifies short and medium term priorities for the sector.

This year was a significant milestone for national policy making, as the government launched the second five-year Economic and Development Poverty Reduction Strategy (EDPRS II). The agricultural sector will play a major role in operationlising EDPRS II to achieve national growth and export targets, while also reducing poverty. The sector provides jobs and trade opportunities, but is further key to improving incomes for the majority of the population who still rely on agriculture for their livelihoods. Under EDPRS I rural poverty fell by 12%, from 61.9% to 48.7%, improving living standards for 1 million Rwandans. Reform of the agricultural sector was responsible for a major part of this achievement, and continues to be essentially linked to national development.

Therefore, to realise EDPRS II, the Ministry launched our third sector strategy in June 2013 (PSTA III). This strategy adopts a dual approach to both increase production of staple crops and livestock products to improve food security, and to leverage private sector investment to increase agricultural exports, processing and value addition. Through this approach we will generate inclusive and sustainable growth and create a vibrant commercial and productive sector. MINAGRI will work in partnership with farmers, business, donors and other Ministries to realise PSTA III, drive agricultural and GDP growth, and meet the targets of EDPRS II and Vision 2020.

I wish everyone a fruitful year.

Dr Agnes Kalibata
Honorable Minister of Agriculture and Animal Resources, MINAGRI

Foreword by the Permanent Secretary of the Ministry of Agriculture and Animal Resources

The 2012-2013 annual report highlights the many achievements of the agricultural sector this year. With the launch of PSTA III, the role of government is changing from provider to facilitator of agricultural development. Therefore, although we continue to invest in the major factors of production to increase outputs, MINAGRI is also increasingly working with the private sector to support market development, generate new business, drive innovation and provide the services farmers need.

This year has seen major progress in development of both hard and soft infrastructure to support productivity gains and the commercialisation of agriculture. A major new feeder road construction and maintenance programme is now under way, and processing will be supported by construction of the new Special Economic Zone for agri-business. On the field, a new soil erosion baseline will allow us to better target interventions to increase yields in a sustainable way, and the area of land under irrigation has continue to rise. Increasing access to inputs and extension services remains a priority area, and last year's privatization of the fertilizer distribution network will improve market efficiency.

MINAGRI has also supported the development of a conducive environment for entrepreneurship and agri-business development. Access to finance and crop insurance projects encourage farmers to add value to protects and hedge against risks. In line with the new strategy, PSTA III, which envisions greater private sector involvement, Rwanda has continued to lead in the Grow Africa forum, connecting investors to opportunities, and has started preparations for the second round of CAADP (the Comprehensive Africa Agriculture Development Programme) to support productivity and growth.

Over the next five years of PSTA III, MINAGRI will continue to invest in both the physical and institutional agricultural environment to sector development. I would like to thank the many actors who continue to contribute to MINAGRI's success.

Best regards for the coming year,

Ernest Ruzindaza
Permanent Secretary, MINAGRI

Picture 1: A farmer works to plant borders along field ditches, which will protect against soil erosion, under the KWAMP project

Section 1: Introduction and Summary of Sector Performance

1.1 Overview of the Agricultural Sector

Agriculture in Rwanda is experiencing a period of transformation. The sector made significant progress under its first and second strategic plans, PSTA I and PSTA II. Productivity and production for many crops sharply increased and improved rural incomes. This was driven by significant expansion of interventions to drive productivity gains, including successful land consolidation, increased areas under irrigation and protected against soil erosion, and expansion of cultivated terraces. Access to services including agricultural finance and extension has been improved, and farmers also have increased access to inputs and improved seeds. Specific programmes such as the Crop Intensification Programme and 'One Cow per Poor Family' (Girinka) improved crop yields and expanded the animal resource sector. These production increases have had a positive impact on both sector growth and reducing rural poverty. The overall agricultural growth rate between 2000 and 2010 was 5.8% per annum, the proportion of land under modernised agricultural increased from 3% to 20% in the same period.

Over the next five years, as we approach the end point for Rwanda's overarching development framework Vision 2020, sector growth must be driven by both further yield increases and a more market driven approach. PSTA III is an investment framework for private sector development, soft and hard infrastructure for agri-business and increased production of high value crops and processing. However, the strategy also recognises the opportunity for further yield increases in staple crops, to facilitate domestic food security. The approach is integrated - gender inclusivity and environmental sustainability are mainstreamed across programmes. In the short term, continued rapid food production increases will ensure further reductions in rural poverty and malnutrition. In the medium term, Rwandan agriculture will develop from a largely subsistence sector to a more knowledge-intensive, market-oriented sector, sustaining growth and adding value.

During the last financial year, the sector has made important steps in realising the vision of market oriented production. The Ministry of Agriculture and Animal Resources (MINAGRI), its two task forces of irrigation and mechanization (TF I&M) and post-harvest handling and storage (TF PHHS), the Single Project Implementation Unit (SPIU) and the two implementing bodies, the Rwanda Agriculture Board (RAB) and National Agricultural Export Development Board (NAEB), have worked in partnership to deliver strategic programmes and projects. This report outlines the achievements and challenges of the sector of the 2012-2013 financial year, and served as the reference document for 2012-2013 backward looking sector-wide review. More details can be found in the RAB and NAEB Annual Reports. The final chapter also identifies priorities for the next financial year. It will be a major task to effect the systemic change required to double productivity and achieve ambitious national goals. It is only through a partnership based approach focused on implementation that MINAGRI, in collaboration with the private sector, donors and farmers, can effectively transform the sector, and drive forward Rwanda's overall development trajectory.

With the agricultural context explained, the rest of this chapter outlines progress in key agricultural intervention areas of crop production, animal production, irrigation, land husbandry and mechanization, post-harvest handling and storage, export promotion and key cross-cutting issues.

1.2 Progress Towards Vision 2020

Vision 2020 defines the main goals for the sector which must be met to achieve middle income status and reduced poverty by 2020. Progress towards meeting these targets continues, with key indicators illustrated in table 1. Agricultural growth held at 5.4% in the last financial year, although with further investment in the sector under PSTA III growth should increase to the 8% required to meet Vision 2020. Fertiliser application will continue to increase, as distribution is privatised, leading to a more competitive market, and farmers continue to learn about its benefits through targeted extension. Mechanisation continues to grow through distribution of machinery and new service centres. Under the new Mechanisation Strategy, rates will rapidly increase as machine purchase and hire is dominated by the private sector, and the new Power Tiller Assembly plant becomes operational. Soil conservation remains a priority, although terracing and erosion control remains dominated by public and donor financing and supported by farmer labour and community work. Similarly, tackling mal-nutrition is also public and donor financed, and interventions will be substantially scaled up under PSTA III, as it is a priority area under EDPRS II. Progress in these areas illustrates the role the public, private, donor and civil society across different programmes.

Revised Selected Vision 2020 Indicators	2000 (calendar)	FY 2012-2013	2020 revised (calendar)
Agricultural GDP growth (%)	9	5.4%	8.5%
Agriculture as % of GDP	45	32%	25%
Fertilizer application (kg/ha/annum)	0.5	29 kg	50kg
% of Agriculture Operations Mechanized	n.a.	12%	50%
Food Security Indicator: Food Consumption Score	n.a	Poor FCS: 4% Borderline: 17% (2009)	Poor FCS: 0% Borderline:5%
Soil erosion protection (% total land)	20	87.3%	92% *will be revised

Table 1: Selected Vision 2020 Targets

Figure 1 illustrates the agriculture growth rate since 2006. The figure shows recovery from a 2010 drop with 2012 growth of 5.4%. The rise in the agricultural growth rate is a promising sign, as it demonstrates the realization of productivity gains through programs such as crop and livestock intensification. With the implementation of PSTA III and resulting increases in outputs and revenue generated through value addition, growth should continue its rising trend to reach the target average annual rate of 8.5%.

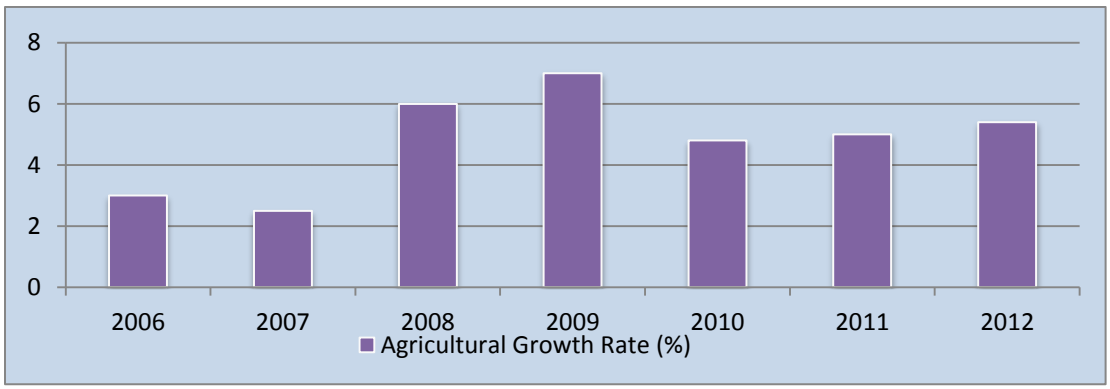


Figure 1: Agriculture growth rate (NISR)

1.3 The Launch of EDPRS II and PSTA III

The second economic development and poverty reduction strategy (EDPRS II) was launched in 2013 to accelerate the progress already achieved and to shape the country's development to realize Vision 2020. EDPRS II continues to build on key policy areas focused on during EDPRS I, to accelerate growth, create employment and generate exports. In addition, EDPRS II has an innovative new component to leverage greater engagement of the private sector, which will become the primary driver of economic growth and poverty reduction. This will facilitate economic transformation and alleviate constraints to investment growth. To encourage innovation and the shift towards a modernized knowledge economy, EDPRS II also supports the development of appropriate skills to increase productivity, particularly for the youth, and drive regional and international competitiveness.

EDPRS II will be implemented through four thematic areas. Rural development focuses on reduced poverty through increased agricultural productivity, supported by improved rural infrastructure to connect farmers to markets. The goal of economic transformation, including 28% annual export growth, requires increased private investment in agri-processing, to create employment and add value to agricultural products for domestic, regional and international markets. Related to this is the need to develop skills, encourage entrepreneurship and increase access to finance, accounted for under the productivity and youth employment thematic area, to create a knowledge-based, innovative sector. Accountable governance provides for increased participation at all levels and improved service delivery, to generate inclusive growth.

Agriculture plays a particularly important role in the economic transformation and rural development thematic areas. To achieve the targets of 28% export growth and 11.5% GDP growth the Government will strengthen the institutional set-up for export promotion and prioritize sector-specific soft and hard infrastructure. Investments will focus on those sectors where Rwanda has or is likely to have a comparative advantage, particularly in agriculture. Generating greater premiums from traditional export commodities and further developing emerging value chains is a priority. The rural development thematic area aims to reduce poverty from 44.9% to below 30% by 2018. This will be achieved through increased agricultural productivity driven by targeted interventions including irrigation, land husbandry, advisory services, rural infrastructure and methods to bulk up production and link farmers to business, processors and markets. Agriculture must drive inclusive growth and reduce poverty.

The PSTA III was developed in line with EDPRS II (see Annex I). Agriculture will remain a dominant economic sector over the next five years, contributing 33% to GDP in 2012. PSTA III will move the sector from subsistence to commercialisation, building on comparative advantages and supporting skills development for small-holder farmers. A progressive shift towards the private sector will be the main instrument for achieving greater productivity and higher rural incomes, particularly through strengthening value chains. Agriculture is also integral to 'foundational issues' including macro-economic stability, nutrition and decentralization, and the cross-cutting themes of gender and environmental sustainability. PSTA III considers these through a sustainable, inclusive approach. The strategy thus provides a roadmap to a diversified, modern sector, supporting domestic food security and agricultural commercialisation, to reduce poverty and drive growth under EDPRS II.

PSTA III has four programme areas (Figure 2). Projects and interventions will now align with these:

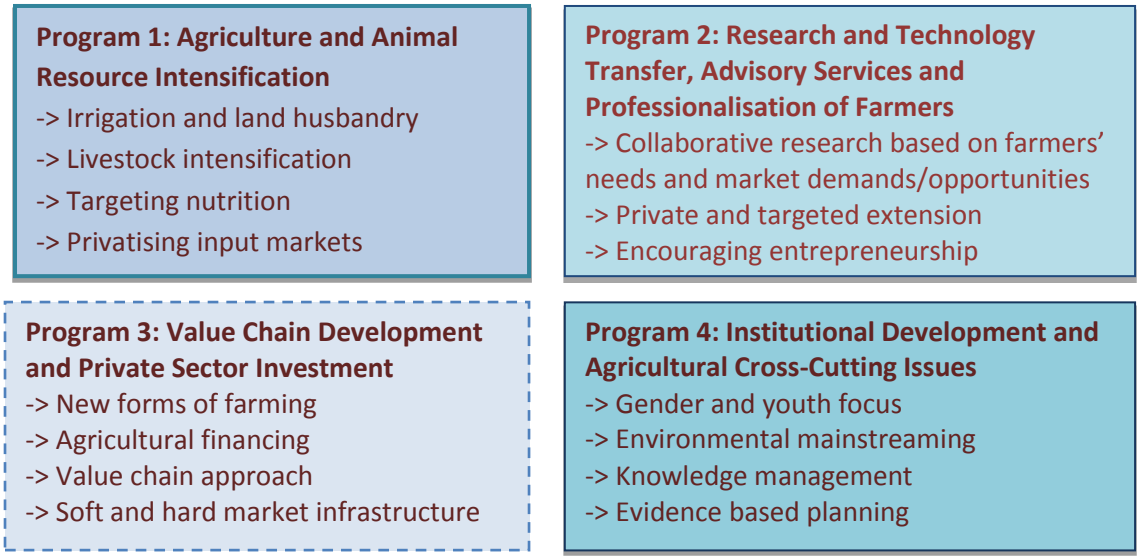


Figure 2: PSTA III programmes and key intervention areas

1.4 Crop Production Report

Crop production represents one of the most important indicators of the sector's success. MINAGRI and its implementing agencies invest heavily in diverse areas to drive up yields, including infrastructure based programmes such as irrigation and terracing, inputs provision, training to improve production management and research to identify the best carieties for different agro-climactic zones. 2012-2013 was a successful year for crop production, with output increases driven by both larger areas for cultivation and high productivity. Unfortunately, heavy rains at the start of Season B resulted in some loss, however, MINAGRI will continue to work with farmers to mitigate the effects of adverse weather conditions. Furthermore, the roll out of agricultural insurance will help farmers hedge against the risk. Tables 2 and 3 illustrate key results for Season A and Season B, within the financial year 2012-2013, including the (i) area under the crop, (ii) yield and (iii) the resulting production.

Crops	Area under crops (ha.)			Yield (kg/ha)			Production (Mt)		
	2012A SEASON	2013A SEASON	Change	2012A SEASON	2013A SEASON	Change	2012A SEASON	2013A SEASON	Change
Sorghum	9,827	9,664	-2%	1,232	1,328	8%	12,105	12,835	6%
Maize	168,877	210,191	24%	2,406	2,407	0%	406,389	505,887	24%
Wheat	5,051	9,405	86%	1,562	1,530	-2%	7,887	14,385	82%
Rice	5,887	8,507	44%	5,725	4,912	-14%	33,702	41,787	24%
Beans	224,229	225,132	0%	1,093	1,128	3%	245,191	253,952	4%
Peas	20,866	20,762	0%	729	784	8%	15,210	16,271	7%

Groundnuts	11,563	14,048	21%	552	541	-2%	6,380	7,597	19%
Soybeans	18,038	20,346	13%	566	576	2%	10,217	11,717	15%
Banana	167,714	169,180	1%	9,565	9,777	2%	1,604,149	1,654,150	3%
Irish Potato	92,853	90,162	-3%	16,172	15,883	-2%	1,501,595	1,432,045	-5%
Sweet Potato	47,667	52,784	11%	8,639	9,474	10%	411,788	500,049	21%
Yam_Taro	9,133	8,928	-2	6,019	6,428	7%	54,927	57,397	4%
Cassava	92,119	95,771	4%	12,072	13,637	13%	1,112,055	1,306,014	17%
Vegetables & fruits	24,971	28,928	16%	10,806	11,092	3%	269,842	320,932	19%

Table 2: Crop Assessment 2013 A (MINAGRI)

The data from Season A illustrates that increased area for fruits, wheat and rice and maize have been made available. This expansion in cultivation is explained by various factors, including MINAGRI's renewed emphasis on improving nutrition partly through increased cultivation of staples and vitamin rich fruits. Furthermore, the marketability prioritization is focusing on those crops with the most potential for domestic and regional markets and revenue generation. Yields and production also increased significantly in Season A for the majority of crops. In particular maize, wheat, rice and sweet potato increased production by over 20% in comparison to Season A 2012. This demonstrates the success of new irrigation infrastructures, improved land consolidation and effective season preparations.

	Harvested area by crop(ha)			**Yield (kg/ha)**			**Crop production (MT)**		
Crops	**2012B**	**2013B**	**Variation**	**2012B**	**2013B**	**Variation**	**2012B**	**2013B**	**Variation**
Sorghum	87,316	99,457	14%	1,450	1,454	0%	126,590	144,658	14%
Maize	84,820	82,135	-3%	1,965	1,972	0%	166,649	161,947	-3%
Wheat	29,965	25,794	-14%	2,270	2,161	-5%	68,026	55,744	-18%
Rice	8,814	9,062	3%	5,715	5,734	0%	50,377	51,959	3%
Beans	117,368	112,664	-4%	470	453	-4%	187,666	184,264	-7%
Peas	138,302	142,217	3%	958	937	-2%	11,348	11,607	2%
Groundnuts	15,453	16,946	11%	734	685	16%	5,258	6,817	30%
Soya	9,075	10,111	21%	579	674	16%	8,327	13,121	58%
Banana	13,597	16,426	1%	612	799	0%	1,615,317	1,637,703	1%
I. Potato	171,339	173,515	4%	9,428	9,438	-7%	836,110	808,670	-3%
S.Potato	71,926	74,529	-3%	9,616	9,743	1%	836,110	808,670	-3%
Yam & Taro	16,801	16,808	0%	7,200	6,822	-3%	118,002	114,675	-3%
Cassava	61,721	59,652	1%	17,755	18,001	1%	1,604,366	1,642,106	2%
Fruits &Vegetable	50,654	49,382	-3%	13,090	12,611	-4%	663,251	622,766	-3%

Table 3: Crop Assessment 2013 B (MINAGRI)

Table 3 illustrates the comparison between Season A and B. Heavy rains at the start of the season damaged some crops before maturity, reducing outputs and meaning that production did not meet the forecasted harvest. For example, the production of maize in 2013B decreased slightly when compared to 2012B production, bean production decreased by 7% and sorghum decreased by 14%, although yields remained high. Productivity generally remained high, even though overall production decreased. This again demonstrates the gains of yield enhancing measures and the Crop Intensification Programme (CIP). The effects of heavy rains at the start were exacerbated by a lack of rains at the end of the season, which meant wheat production decreased by 18%. In contrast to other staple crops, soybeans performed well, as production increased by 30% and the area of cultivation increased 11%. This is promising as soy is a potentially high revenue generated export crop, while also providing protein for domestic consumption. Therefore, despite the adverse weather, crop production continued to show positive trends and outputs, reflecting well on investment made in the sector. This is demonstrated by figure 3, showing food crop production from 2005 to 2013.

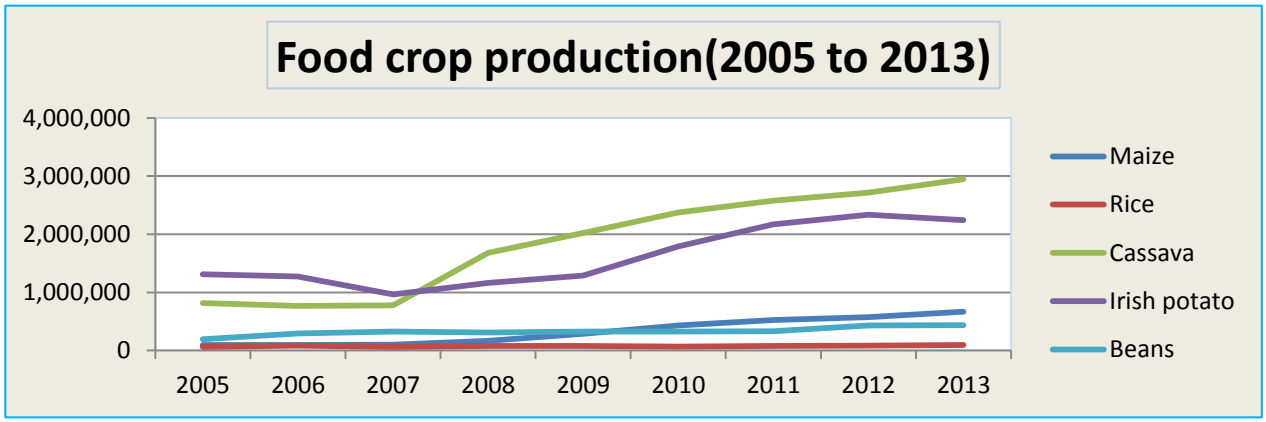


Figure 3: Food Production Time Series (MINAGRI)

Since 2005 production for all crops has increased, with a slight decreased and recover for Irish potato in 2007-2008. Rice production remains relatively low, as cultivation areas focus on marshlands and cover fewer hectares than other crops. However, a new rice sector development strategy should increase output. Irish potato and cassava have grown rapidly, driven by high and growing domestic demand. There are plans to build a potato processing plant to capitalize on the value addition potential of Irish potatoes, and start to export to the region. Beans production has remained relatively constant, and also mostly meets a stable domestic market. Maize production has increased slowly, and this should increase with new maize processing plants providing a market for the product. Overall, trends are positive for domestic food security and export potential.

Price Trends

As the Ministry in charge of production it is imperative that MINAGRI seeks to understand food price movements. Given the context of increasing food prices regionally, this section examines the domestic price developments of key crops over the past financial year. Generally, prices follow cyclical trends – lean periods of production result in higher prices (note general increases from October to December, the pre-harvest period Season A) and February to May (pre-harvest period for Season B). However, this year cereal, pulses and sweet potatoes have remained relatively stable, while cassava, Irish potato and cooking banana have varied.

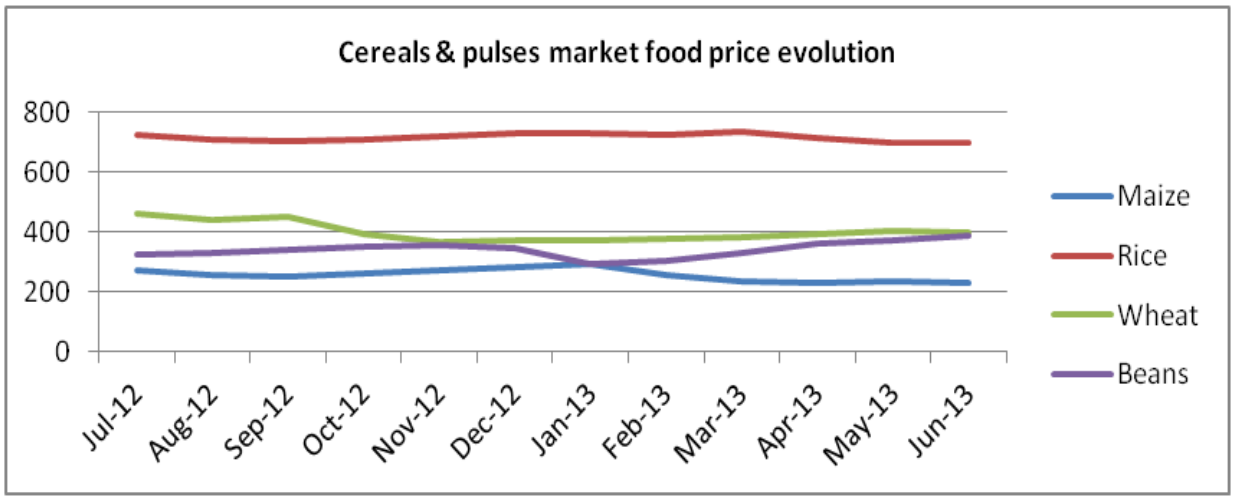


Figure 4: Cereal and pulses average market price (MINAGRI)

The market prices of rice and wheat, both of which have negative terms-of-trade, have remained relatively stable over the last year. To note, when compared to 2008, this trend is impressive and points to vast improvements in domestic production. As a medium to long-term strategy, MINAGRI is seeking to mitigate the vulnerability to external price shocks by aggressively up-scaling its rice and wheat production. The price of maize has decreased towards the end of the year due to low demand, and beans remain relatively stable.

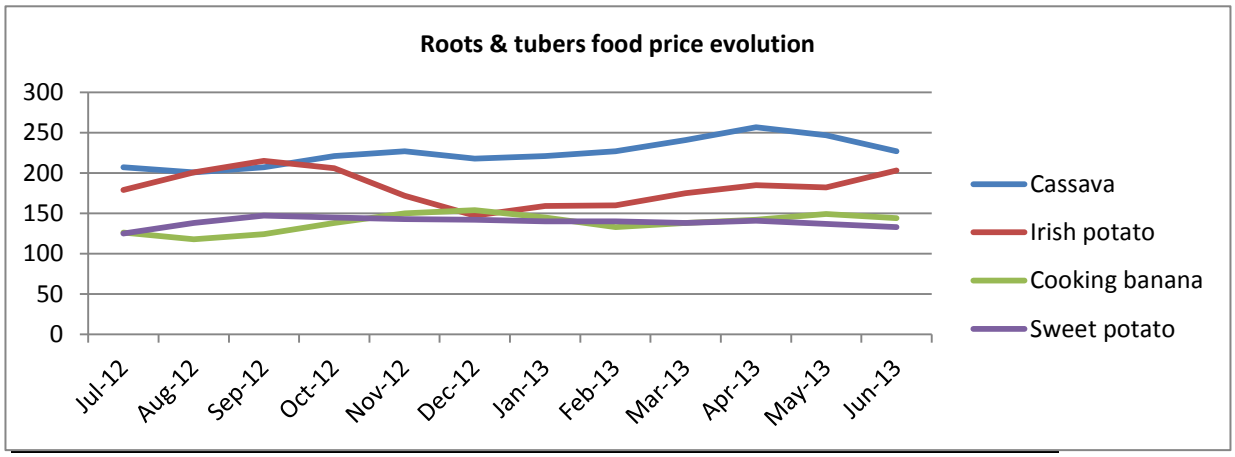


Figure 5: Roots, tubers and banana average market price (MINAGRI)

Irish potatoes and cooking banana prices varied with seasonal output. However, the prices for sweet potatoes and cassava remained relatively constant. Overall, in comparison to previous years, prices are higher now, and have remained so despite production increases. Improvements in quality of crops and increasing regional demand, to an extent, explain the increase in prices. In particular, Maize has seen high prices in Rwanda. Irish potato has also seen very positive price development given increasing demand internally and externally. There have also been significant differences in rural and urban prices that could indicate impediments to farmers increasing revenues, and means that general price trends shown here may not accurately depict regional variations. Post-harvest constraints such as increasing fuel prices, post-harvest losses and large disparities between farmer and trader profits could explain this price difference. MINAGRI will seek to support post-harvest infrastructure to support fairer prices for the farmer and price stability more generally.

1.5 Livestock Production Report

Livestock is an increasingly important area for Rwanda's agricultural sector. Although the livestock sector is still relatively small, animal resources are recognized as an opportunity to increase domestic food security, improve nutrition provision of animal proteins and generate a useful asset to poor families. There is also a growing demand for meat and fish, dairy, eggs, honey and hides and skins both domestically and regionally, which represents a further opportunity for sector investment and growth. In the financial year 2012-2013 MINAGRI and RAB focused on animal resource sector modernization, expansion and intensification. New strategies for poultry, small animals, meat and genetic improvement moved into the implementation stage. The new Dairy Strategy and Dairy Seal of Quality were also finalized last year, and will be implemented from July 2013. The new overarching PSTA III highlights the role of livestock over the next five years, including the growth of the fishing industry, the potential for further exports of premium products such as honey, and the potential to further strengthen and integrate entire value chains e.g. for meat and dairy. The figures below demonstrate the continued growth of animal resource headcounts, production and consumption.

Figure 6 illustrates how the animal head count has grown over the last five years. The greatest gains have been in small animals, particularly pigs, rabbits and poultry. This is useful for lower income households which may not have the resources to feed and maintain cattle, but are able to benefit from the meat and eggs produced by smaller animals. The poultry headcount has more than doubled since 2008, driven by a concerted programme of intensification. In contrast, cattle, sheep and goat headcounts have remained relatively stable. The marginal decline in the cattle population, despite the Girinka programme which distributes cows to poor families, can be explained by the shift to zero grazing and improved cattle breeds that give more milk. However, the livestock figures also illustrate how livestock distribution alone is insufficient to develop Rwanda's animal resources, and that efforts must be made to train households in providing appropriate care, establish an effective service delivery network to improve animal health, improve the productivity of each animal and focus on value chain development to attract investors and produce premium animal products. This is particularly valid considering Rwanda's limited land availability for livestock grazing.

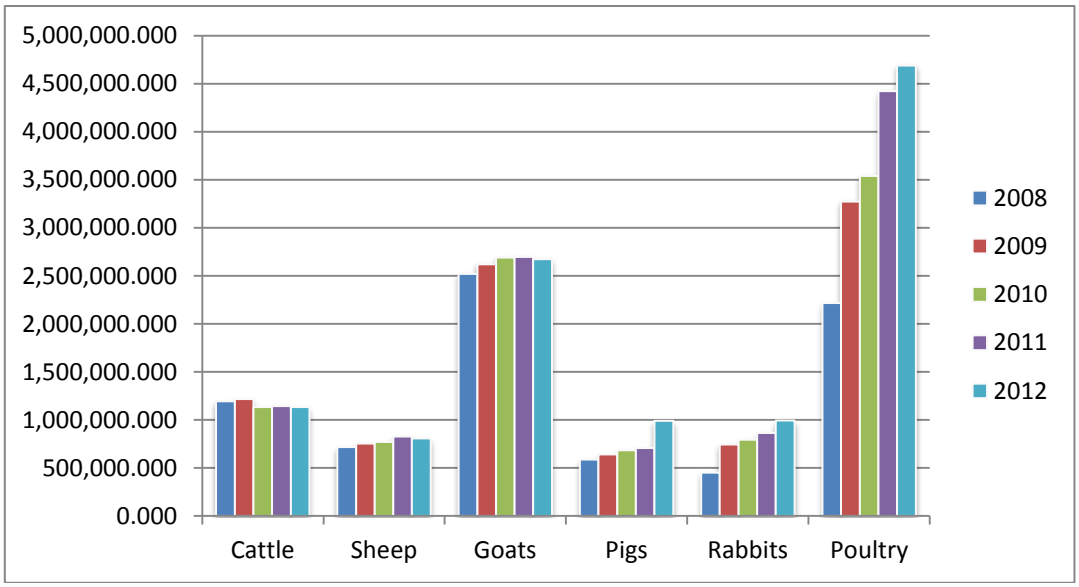


Figure 6: Animal head count for 2008-2012 (MINAGRI)

The increase in animal head count has contributed to the greater production of animal products, shown in table 4 below. Between 2005 and 2012 milk production has increased almost five times, and this will continue under the 2013 Dairy Strategy. Meat production has almost doubled, and should continue its increasing trend alongside fish. This will be supported by the Aquaculture plan and prioritization of fisheries under PSTA III, and the meat strategy. Honey production is still relatively low, but market opportunities exist for premium exports and apiculture will continue to be explored as a revenue generating opportunity. Egg production has increased five times, reflecting the increase in the poultry headcount. This has positive implication for nutrition as egg consumption provides both protein and micro-vitamins as part of dietary diversification. Overall, since 2005 animal production has continued to increase. This represents a market opportunity both for household consumption and commercialization of the sector, particularly to capitalize on regional demand for milk, hides and skins and investigate further marketability of animal products.

Product	2005	2006	2007	2008	2009	2010	2011	2012
Milk	121,417	152,511	189,827	257,480	334,727	372,619	442,337	503,130
Meat	48,861	52,226	54,780	56,900	65,863	70,928	73,633	74,519
Fish	6,868	9,267	9,655	12,594	14,104	15,007	15,526	17,566
Eggs	1,326	1,536	1,620	2,327	3,268	5,203	5,736	6,324
Honey	1,399	1,676	1,084	1,654	2,684	2,921	3,221	3,785
Hides & Skin	2,158	3,183	4,137	4,496	4,098	4,072	4,017	3,814

Table 4: Animal production in tons 2005-2012 (MINAGRI)

Meat production can be broken down into types of meat to better understand consumption patterns (figure 7). Beef accounts for the highest volume of production, representing the productivity of cattle despite the relatively low headcount. Goat meat is the second highest production, driven by traditional dietary preferences and high availability. Poultry has jumped sharply, even though chicken remains a relatively expensive meat which is still perceived as a luxury item. Rabbit, sheep and pork production are rising more slowly, but increased headcounts and better food produced by a new planned feed mill will support productivity increases for these animals.

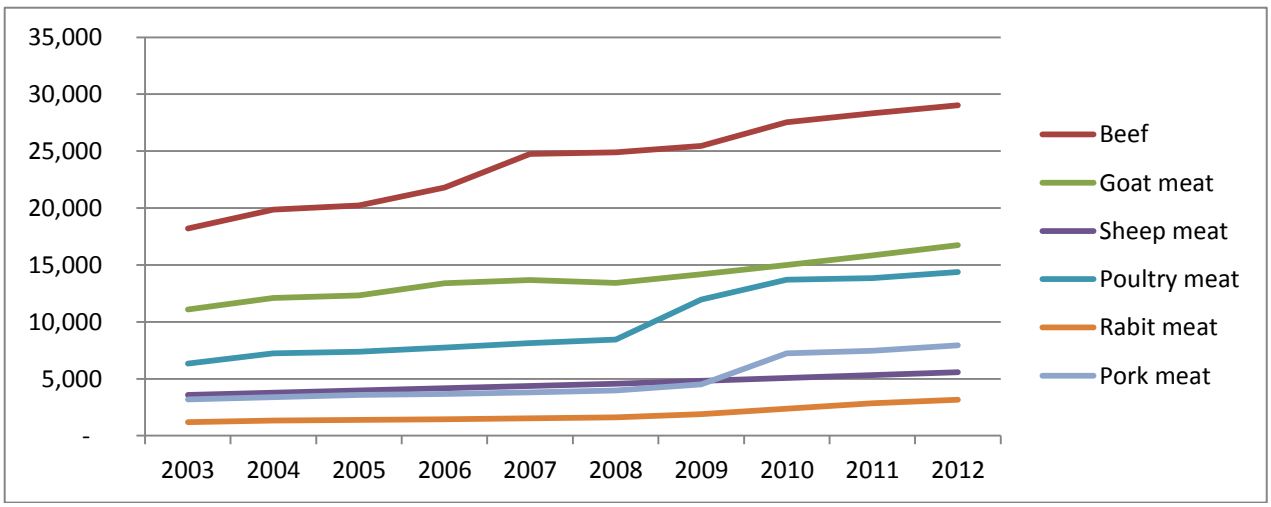


Figure 7: Meat production between 2003-2012 according to meat type (MINAGRI)

Increasing animal productivity and production over time is matched by the increasing trend for consumption of animal products (figure 8). As incomes increase with GDP growth, consumers prefer to purchase animal products. Increasing consumption is a function of Rwanda's growth and poverty reduction, and also the increased availability of animal products and more competitive pricing. Although fish and egg consumption remain relatively low, nutrition education campaigns combined with increased production will increase consumption. Milk will continue its upward trend with the new Seal of Quality to reassure consumers about the high standards of domestically produced dairy quality. Overall, increased animal protein consumption supports better nutrition, and these figures are therefore a positive indicator of improved food security

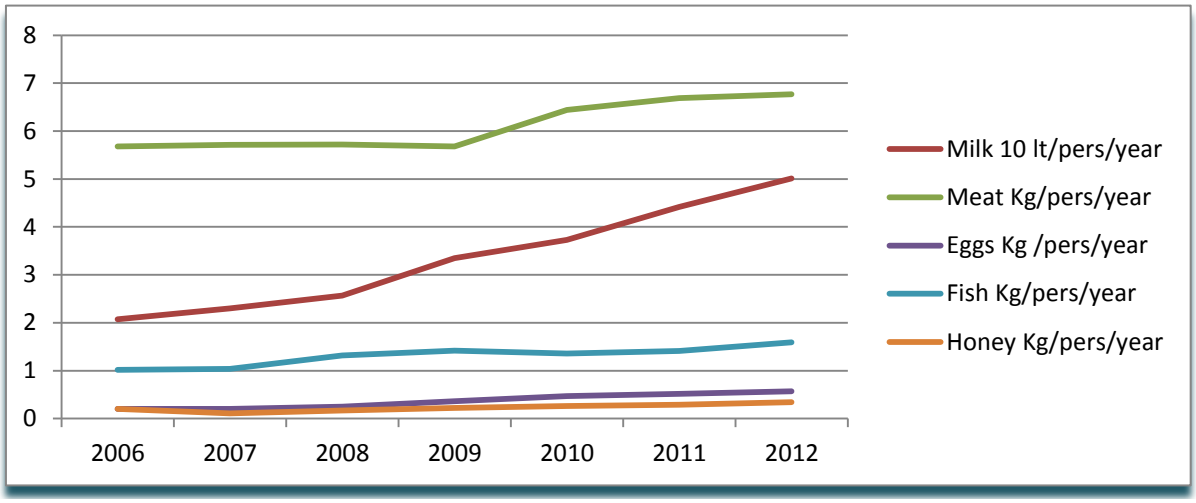


Figure 8: Consumption of animal products per person per year (MINAGRI)

MINAGRI and RAB will continue to work to develop the livestock sector. Under PSTA III livestock is included as a separate programme area to ensure it is prioritized alongside crop production. The value chain section also identifies specific interventions for strengthening the supply chain and market development for all animal resource and fish products. The dual role that livestock development has to both increase rural incomes and improve nutrition is also an important focus area, and a policy action for the coming financial year will explore the possibility of livestock packages for poor households, based partly on the Girinka model, to provide protein and animal assets. More details about the achievements of specific livestock projects are in section 3.

1.6 Irrigation, Land Husbandry and Mechanization

Irrigation and land husbandry are key priority areas for MINAGRI as they both improve productivity and mitigate the effects of adverse weather shocks for farmers. Mechanization improves productivity and can contribute to value addition and quality promotion. Although interventions in these areas are costly, they have also contributed greatly to the increased yields generated by PSTA I and PSTA II. In the financial year 2012-2013, the Task Force for Irrigation and Mechanization (TF I&M), working together with RAB, project units and development partners, implemented various activities to improve land and water management and disseminate farm equipment among rural beneficiaries. In relation to irrigation, a total of 8,558 ha of marshland and hillside were developed, shown by table 5.

Type of Irrigation	2012 A	2012 B	2013 A	2013 B	2014 (Expected)
Marshland Development (ha)	17,363	22,681	23,000	24,721	26,500
Hillside Irrigation (ha)	450	450	1,522	1,650	4,350

Table 5: Marshland development and hillside irrigation in ha (MINAGRI)

In relation to mechanization, by 2012 13.5% of farm operations were mechanized. Mechanisation progress is illustrated by table 6.

	2012 A	2013 B	2014 A (planned)
Land ploughed (ha)	11350	12000	15000

Table 6: Land mechanically ploughed in ha during the FY 2012-2013 (MINAGRI)

The Irrigation and Mechanization TF also implements three key projects: the Immediate Action Irrigation Project (GFI), the Gishwati Water and Land Management Project (GWLM) and the Agricultural Mechanization project. The full reports of their achievements are found in section three. In addition to the projects, this year the TF has made significant progress in developing the capacities of the water users organisations, which are a key factor in maintaining irrigation schemes to ensure they are sustainable.

Water Users Organisations (WUOs)

In accordance with the Ministerial Order No 001/11.30 of 23/11/2011 published in Official Gazette No 50 of 12/12/2011, MINAGRI and its partners are implementing Water Users Organizations (WUOs) to run and maintain the hydraulic infrastructures in all irrigation schemes in Rwanda. A Water Users Association Support Unit has been set up under the Task Force for Irest prrigation and Mechanization to oversee the implementation of WUOs. The Unit started to operate in November 2011 with two staff and a specialist in charge of Cooperative development was recruited in December 2013.

By the end of the 2012-2013 fiscal year, 87 WUOs were operating across the country supported by various projects and institutions. Activities this year focused on building organizational capacity and harmonization of WUOs governing bodies. Members received training in administrative and financial management, operation and maintenance of irrigation infrastructure and bylaws and regulations. Furthermore, in collaboration with Rwanda Governance Board, 42 WUOs were supported to formalize their documents to be recognized as national NGOs. 22 WUOs are now officially registered. The project also recognizes the special support required to develop and integrate the relationship between cooperatives and WUOS, and has supported training in this area to ensure effectiveness.

Figure 9: WUO field training

In order to serve as an umbrella and coordinating body working with both WUOs and MINAGRI and projects directly, over the last financial year District Irrigation Steering Committees were established in 17 Districts. District agronomists also received training on irrigation extension to support local level implementation and functionality of the WUOs and staff have had the opportunity to share practice through workshops.

The WUO support unit is generally happy with the progress achieved over the last 18 months. However, there have also been major challenges over the last year. These include a lack of information (data and mapping) of irrigations, and a lack of human resources to implement projects (for example, limited staff time, and limited buy-in from local leaders). Financial constraints at the WUO level constrain operation and maintenance activities, and are exacerbated by high water fees per irrigation unit area, particularly in hillside schemes, which are not yet offset by greater yields and productivity returns. To mitigate these challenges, over the next year the WUO Support Team will work to decentralize technical support for district level schemes and to support better information management. There was also a policy action completed over the last financial year to establish irrigation scheme management models which could incorporate both WUO and District Steering Committees to create a clear line of responsibility for scheme maintenance and rehabilitation. These models will be implemented over the coming year. The new policy action this year will focus on establishing evaluation guidelines to ensure schemes are safe and functional. This will also support data gathering and improve sustainable scheme management.

1.7 Post-Harvest Handling and Storage

The Post Harvest Handling and Storage Task Force (PHHS TF) was established in 2010 to help reduce losses after harvest, improve market access through feeder roads and add value through processing. This results in higher outputs and increased revenue, and therefore enhances food security and generates better returns for farmers. The overall aim of the PHHS project is to reduce food insecurity through an efficient post-harvest private sector system delivering staple foods to the people of Rwanda. Specific objectives aim to strengthen food security for rural staple crop producers while also improving consumer access to safe and affordable food. Private sector leverage is key to strengthen the competitiveness of staple crop value and supply chains, and this will help to improve efficiency and reduce costs. The combination of both a producer and consumer focus will also enhance farmer access to and linkages with markets.

Over the last fiscal year there have been many successes in PHHS. In order to reduce pre- and post-harvest losses that occur between the field and the first point of aggregation, the PHHS TF has been engaged in different activities including training and coaching of farmers, dissemination of post harvest tools and equipments, construction of model drying and storage facilities as well as promoting efficient and equitable transport system across staple crop producing areas. According to surveys that have been conducted to quantify and evaluate staple crop post harvest losses, the post harvest losses of maize and rice have therefore been reduced to 9.24% & 15.2% respectively for 2013 A.

In order to continue to improve post harvest management for other crops, training manuals for beans, Irish potatoes and wheat have been developed and used for training. This training has been conducted to build the capacity of farmers from different cooperatives to improve their knowledge on post harvest best practices. This leads to obtaining quality produce and ensuring sustainable rural incomes. A total of 14,195 farmers (from over 500 cooperatives) have been trained in post harvest best practices for different crops including maize, rice, beans, Irish potatoes & wheat. A further 47,281 farmers received training from post harvest extension staffs who were regularly deployed to Districts and Sectors.

Infrastructure and equipment also plays an important role to reduce losses. During the 2012-2013 financial year, 11,061 sheetings (tarpaulin) were distributed to maize, rice and wheat farmers and 1,227 shellers were distributed to maize farmers. Public and private media were used to increase awareness of the benefits of post harvest improvements at the farmer and private sector. New storage bags (Hermetic grain storage bags) that help farmers to store grain without using pesticides can be used at household level. Last year, 1,113 Hermetic grain storage bags were distributed to farmers as a demonstration project. Modest drying grounds, temporary drying shelters and storage facilities have been constructed to increase and stabilise farmers' incomes, and to preserve the quality of products. 20 drying grounds, 1,879 temporary drying shelters, 1 storage facility and 1 collection centre were constructed in different districts. To ensure sustainability, farmers and local leaders are trained to recognise the importance of different infrastructure, and have ownership over it.

To link farmers to markets, follow up on the construction of 13.5 km of feeder roads was completed in Nyagatare, Kirehe and Rutsiro Districts. Technical studies have been undertaken for feeder roads of 107.8 km in Nyagatare, Ruhango and Gatsibo Districts. Funds have now been mobilized to support the feeder roads programme and as a result, development partners have expressed their willingness to support feeder road maintenance and rehabilitation, including the World Bank, European Union, Embassy of the Kingdom of Netherlands and USAID.

Mobilization of private sector to engage in post harvest activities is a further priority area. In the 2012-2013 fiscal year two storage facilities of 5,400 MT capacity were constructed by entrepreneurs in Rubavu and Kamonyi Districts. This allows better access to markets according to high prices. In order to support farmers' management and business development, a total of 23 farmer's cooperatives have been linked to financial institutions, and have therefore been able to access inputs and compete on the market.

Figure 10: New processing facilities in Kigali

Agro-processing is a further major priority area. In order to promote value addition, different processing plants have been constructed including a rice processing plant, edible oil soya processing plant, seed processing plant and an animal feed processing plant. Three rice mills (with input capacity of 2.2-2.6 MT/hr and output capacity of 1.5-1.8 MT/hr) and their storage facilities have been constructed in Bugesera, Kirehe and Gatsibo Districts. In order to promote private investment in the agriculture sector, they have been privatized and handed over to 3 private companies. Seed plant civil works and machine installation have also been completed: 1,000 MT of seeds have been processed, packed in 2kg and 25kg packs and dispatched for distribution to farmers. Cob dryer and sorting house installation is ongoing and stands at 75% with most of the conveyors having been installed and dry testing done. Three metallic silos have been constructed (metallic silos with capacity of 20,000 MT has been completed in Kigali Special Economic Zone, foundation construction and machine installation for Nyagatare metallic silos with 10,000 MT capacity is in progress, and civil work for Bugesera metallic silos with 6,000 MT capacity is 99% complete while installation is at 60%.

The Edible Oil Processing Plant (16.6 MT/hr capacity) has been installed in Kayonza District. The total installation works of the plant stands at 90%. A feasibility study on the construction of Irish potato processing plant in Musanze District has been conducted, and mobilization of shares is ongoing. The animal feed processing plant project initiated by MINAGRI was handed over to private investors. For Rwamagana Animal Feed Plant, the expropriation process has been completed and investors have ordered machines. The plant should be functional in the second quarter of 2013-2014. For Nyagatare Animal Feed Plant, the investor (Bridge 2 Rwanda) secured land and has completed plant construction designs. The plant should be operational by August 2014.

The PHHS TF also manages the National Grain Reserve project. This aims to improve national food security by stabilizing prices and supplies in times of scarcity, and to mitigate potential food shocks. This year 17,063 MT were stored. More details are available in the project report in Section 3.

At the end of the financial year, the TF PHHS is also preparing for the inauguration of the Kigali Agriculture Park. New facilities will include modern storage (metallic silos of 20,000 MT capacity and warehouses of 24,000 MT capacity used to store grains, seeds and fertilizers), the Rwanda Seed Plant with an installed capacity of 25 MT/day, the power tiller assembly plant and a fish collection, processing and distribution facility. It is expected that His Excellency President Kagame of the Republic of Rwanda will inaugurate and open the Agriculture Park.

Figure 11: New facilities at Kigali Agriculture Park

Looking ahead, PHHS TF will continue to ensure the minimizing of post harvest losses and proper produce management in Rwanda by disseminating adequate post harvest practices and appropriate storage and produce marketing systems. In the next year, the Task Force will focus on:

- Supporting farmers on post harvest best practices for different crops through training, coaching and disseminating of post harvest tools and equipments,
- Identifying and prioritizing economically relevant post-harvest technologies,
- Quantifying and evaluating staple crop post harvest losses through post harvest loss surveys,
- Constructing suitable and appropriate drying, storage and processing facilities,
- Reducing road transport cost between production and secondary aggregation points in high potential areas,
- Management of National Strategic Grain Reserves.

1.8 Export Promotion

Agricultural exports are coordinated by the National Agriculture Export Development Board (NAEB), focused on coffee, tea and horticulture. NAEB is also exploring other promising value chains such as sericulture, and these emerging sub-sectors are progressively improving and contributing to the diversification of export earnings. Exports are key to agricultural revenue generation and national growth. EDPRS II has a 28% annual export growth target, which agriculture must contribute to. Furthermore, high value exports such as premium teas, essential oils and floriculture will help achieve the 8% average sector growth and 11.5% national GDP growth targets for Vision 2020.

To develop agricultural exports throughout the fiscal year 2012-2013, NAEB focused its interventions in production, processing, quality improvement and marketing products from the three priority subsectors through the provision of technical assistance, seedlings, seeds, fertilizer, pesticides, other production inputs and marketing facilitation. As a result areas under production increased and Rwandan agricultural exports products were sold on different regional and international markets.

Figure 12: Harvested coffee cherries

During this year, production activities were oriented mainly on expansion of the cultivation areas for priority crops. In order to increase acreage under tea and coffee production, seedlings were prepared and planted. For the coffee sub-sector, NAEB planted an area of 9808 ha and produced a total of 29 millions seedlings for season A 2014. Coffee productivity was also enhanced by increasing the use of mineral and organic fertilizers. A total of 9470 tonnes of organic fertilizers and 2323 tonnes of mineral fertilizers were applied during the course of the fiscal year. These activities resulted in production of 21,199 metric tonnes of exportable coffee and generated revenue of USD 69 Millions. The quality of coffee produced also increased resulting in better prices for farmers and exporters, with an average price of 3.39 USD/Kg.

Activities to develop the tea sector also yielded appreciable results especially in terms of increasing acreage under tea plantation. A total of 1,909 ha were planted including replacement of dead seedlings in existing fields. 36 million seedlings were prepared to be planted during season 2014 A. The productivity of tea plantatio ns was improved by stakeholders through the application of 4575 tonnes of fertilizer. The increased production of made tea generated more than 23,629 MT with a total revenue of USD 62.5 million. Developments in the tea subsector also included reviewing the green leaf pricing model and a market price based model was agreed upon by tea stakeholders. Furthermore, two tea factories, Mulindi and Shagasha, previously under government ownership, were privatized and Karongi tea factory started its operations.

Finally, pyrethrum also performed well in the last fiscal year. Pyrethrum flower production was good and refined extract reached 28,120kgs, far above the 18,123 Kgs realized in 2011-2012, generating USD 7.8 million, exceeding the target set. Currently, 99% of production is exported. Export volumes and revnues have been steadily rising since 2010, driven by value addition through operationlising refineries. However, challenges remain including competition with other crops, crop productivity and land availability. Designing a feasible and comprehensive pyrethrum development strategy will have an important role in helping the sector to achieve further growth.

Further details of Rwanda's export promotion, key production figures, trends and revenues can be found in NAEB's annual report.

1.9 Institutional Development

MINAGRI works in partnership with its implementing bodies, RAB and NAEB, development partners, projects and all major stakeholders. In order to improve institutional capacities and information flows across the sector, to foster a knowledge-based and efficient framework, MINAGRI also continues to invest in institutional development activities. These focus on two areas: agricultural communications and capacity building. In addition to these, MINAGRI has mainstreamed certain key issues across the sector, including environmental sustainability, gender inclusivity, nutrition and food security and private sector development. Considerations of these factors are integrated into policy planning and programming to ensure sector growth is sustainable and inclusive of marginal groups. In the long run, this will create commercially viable but pro-poor centred growth.

1.9.1. Agricultural Communications

The Agricultural Information and Communication Center (CICA), launched in June 2010, is a focal point for all agricultural related information, and works with all sector actors and across every District. CICA's objective is to regularly collect, produce, process, adapt, store, share and disseminate agricultural information. CICA's main achievement over the last financial year was the ongoing production and management of agricultural information through ICT, the MINAGRI website and Agricultural Management Information System (AMIS), extension material development, audio visual extension material development and maintenance of the documentation center and library.

The main achievement across different areas of communication and the media include:

1. **Information Communication and Technology:**

- The MINAGRI website was upgraded from Joomla CMS to TYPO3 CMS
- 367 news issues communicated throug both MINAGRI website and AMIS
- 184 staff trained on communication it skills (Web 2.0 and social media)
- Using the MINAGRI hotline, collection of feedback, comments, and inquiries from agricultural beneficiaries and linking them with concerned staff to improve quality of service delivery (between 20 and 65 callers per day, feedback shared)

2. **Extension Material Development**:

- 12 monthly magazines (HINGA WORORA) developed, produced and disseminated to share agricultural information and success stories, innovations and best practice
- 50 weekly flash news bulletins produced and published via email
- 6 modules for extension materials developed and disseminated to farmer groups and agricultural extension officers

3. **Audio visual Extension Material Development:**

- 52 radio and TV programs broadcasted
- CICA worked in collaboration with Huguka Radio to produce and broadcast an extension message based radio programme once a week, live in the studio and from the field, to teach farmers about best practice, new techniques and how to better manage production and marketing.

Figure 13: Extension based radio in the field: Huguka Radio journalist interviewing Agronomist from Gakenke District on lessons learnt for 'New ways of post harvest handling without using chemicals'

4. **Library :**

- The library systems were upgraded from Winsis to KOHA, with additional applications such as circulation, acquisition, serial, cataloguing which are more user friendly for clients

In the 2013-2014 coming financial year, CICA will continue to improve information flows and the quality of information provided to agricultural stakeholders. Planned activities include the development of a user-friendly agricultural extension website for farmers and extensionists, upgrading AMIS, development and launch of an e-library and production of community based radio sketches and documentary films to enhance audio-visual resources and appeal to a broad audience in an attractive format.

1.9.2. Capacity Building

MINAGRI is committed to building staff capacity to improve programme planning and delivery. In the 2011-2012 financial year, MINAGRI piloted the innovative Strategic Capacity Building Initiative (SCBI) to develop ministry level capacity. Over the last 2012-2013 financial year SCBI has continue to recruit experts and young professionals to build the skills base and institutional memory of the sector. SCBI has three principle components, which differ from traditional technical assistance:

1. Hiring of International Experts in technical areas aligned behind priority projects to build capacity in the institution embedded for 1-2 years
2. Hiring local Young Professionals, which the experts coach and mentor
3. Training delivered to ministry staff and smallholder farmers

Experts in different areas have had a significant positive impact on ministry activities. The mechanization expert recruited in 2011 has worked within the TF I&M and has led implementation of the power tillers assembly plant, purchase of machinery, training of farmers and completion and validation of the 2013 Mechanisation Strategy. An expert was also recruited in sanitary and phyto-sanitary services (SPS), who has completed valuable work in drafting legislation, training staff in surveillance and developing the animal health survey, evaluating the current compliance and audit systems and training staff on inspection techniques, and carrying out training in pest risk analysis. The expert is also liaising with other institutions to understand capacity needs in SPS and to complete technical work in relation to agro-chemical and residue management.

An expert in grain storage has been working to develop training materials and deliver training to cooperatives, farmers and extensionists and to upgrade warehouse management systems. Nine senior scientists have been working for RAB sepcialising in entomology, cereal breeding, coffee breeding, animal nutrition, animal health, animal breeding, post harvest, mulberry production and silkworm egg production. These scientists are based in RAB zones and work closely to build capacity of local staff. The final expert works in extension, training RAB staff, building capacity of farmers promoters and extension workers, and facilitating involvement of the private sector.

There are also young professionals working in collaboration with the experts. Two young statisticians have been in post since 2011, and six were recruited in July 2012 to work in pairs in cooperative strengthening, extension and agricultural finance. There is also a young economist working in RAB and recruitment is ongoing for mechanization. The economist expert, communication expert, statistician expert and Agri-finance expert will be hired when the recruitment freeze is lifted.

Looking to next year, SCBI will continue to roll out in areas with capacity gaps and to collaborate with other capacity building programs such as the Human and Institutional Capacity Development program, DFID's initiative and PAPSTA's support of Program 4. Under PSTA III, a new human resource needs assessment and action plan has also been developed, with support from DfID. Implementation of training and skills development according to needs identified will take place in 2013-2014.

1.9.3 Agricultural Cross-cutting Issues – Environmental Sustainability

Environmental conservation is intimately related to agricultural development. MINAGRI has worked with partners to ensure agricultural interventions are environmentally sustainable and climate change smart. The environment and natural resources management have been taken into account during the implementation of planned activities in various ways. Furthermore, in the 2012-2013 financial year MINAGRI has implemented a number of focused Climate Change Smart Agriculture interventions:

1. Organized and supported a capacity building workshop to enable participants to develop a project profiles document to be submitted to the National Climate Change and

Environment Fund (FONERWA). The workshop was attended by different agriculture practitioners including staff from MINAGRI, RAB, NAEB, SPIUs, TFs and private sector

2. Soil erosion control work through both radical and progressive terraces, including 7,933 ha of radical terraces and 13,151 ha of progressive terraces

3. Expansion of crop weather index insurance programmes, to help farmers hedge against adverse weather or climate change related seasonable variability

4. Irrigation development projects (hillside, marshland and small scale irrigation) with an environmental component, to provide water in the case of shortages or drought, which may be due to changing weather patterns

5. Research in new crop varieties that are resistant to draught and diseases which will emerge with a changing climate.

Under PSTA III environmental mainstreaming is recognized as a key cross-cutting issue in Programme 4. Priority areas include soil conservation, sustainable soil fertility, reducing pesticide hazards, improved water management, environmental considerations in rural road construction and planning for climate change. These sub-programmes will be focus areas over the next five years.

1.9.4. Gender Mainstreaming

Rwanda is ranked highly in gender equality terms, with legislation to protect women's rights and an internationally recognized representation of women in parliament. Nevertheless, gender disparities are still prevalent in agriculture. Generally in rural areas, women spend more time engaged in farming activities and caring for the household than men. As a result, on average women have longer working hours, which are worsened by the fact that they are involved in doing activities that are labour intensive and time consuming. MINAGRI has developed a gender strategy that describes the issues in detail and sets out an agenda to address them. Gender mainstreaming activities are also included in PSTA III, the new Nutrition Action Plan and other key strategic documents. Over the 2012-2013 financial year, certain key activities were held to eliminate the gender gaps in agriculture.

The first was a learning visit for Rwandan women in Kenya. In partnership with UN Women, MINAGRI organised a learning visit of Rwanda women farmers in collaboration with the Cooperative Alliance of Kenya (CAK), who hosted and facilitated the programme. Generally, men benefit from trainings and international exposure more than women, so this study tour aimed to connecting women farmers to other networks in the region where they can learn best practice and get better prices. In November 2012, 16 Rwandan women went to Kenya for a 5 day learning visit.

Figure 14: Women study tour to Kenya

The Study Tour aimed to empower the capacity of women farmers to learn from modern farming techniques, best practices in cooperative management in Kenya, and establish networks with Kenyan farmers for information exchange, skills development and marketing.

The second major activity was organisation of training on gender responsive service delivery for extensionists and service providers. The training had the following components:

1. Assessment of agriculture service delivered by extension officers and identification of existing gender gaps
2. Development of a training module which responds to identified gaps
3. Training of extension agents and service providers at the district level.

28 district agronomists, 26 district veterinarians and 18 service providers were trained on gender analysis tools, gender and advocacy for agriculture and animal resources, gender mainstreaming in agriculture and animal resources related tools in service delivery and gender budgeting. The Director General of Planning, Mr Raphael Rurangwa, while opening officially the training, highlighted the commitment of MINAGRI to ensure that gender mainstreaming becomes a reality in agriculture and animal husbandry service delivery, and that without gender responsive service delivery, the ultimate goals of the National Agriculture and Animal Resources Strategy cannot be reached.

Figure 15: Gender sensitive training

PSTA III incorporates many actions to institutionalize gender awareness and gender sensitive programme implementation. The Gender Strategy will continue to be the main document, and MINAGRI will also work to develop, strengthen and operationalise partnerships with gender-focused institutions.

1.9.5. Nutrition and Food Security

MINAGRI is one of the lead Ministries to improve food security and fight malnutrition. In the 2012-2013 financial year MINAGRI joined sister ministries in the implementation of the National Strategy to eliminate malnutrition. The following was achieved:

1. Distribution of cows through Girinka: 5,164 cows donated and 3,177 families received a package of drugs, mineral salt blocks and pumps

2. Small stock distribution to increase animal protein consumption in very poor households with insufficient resources to care for cattle

3. 36,141 nutritional kitchen gardens constructed in the country with a high mobilization at sector level to use them to produce vegetables. 3,151 trainers of

trainers were trained on vegetables production and kitchen garden construction. More information on the development of kitchen gardens across districts in Annex II.

4. 42,190 seedlings planted for nutrient and vitamin rich fruit and vegetables, including avocado and tree tomatoe (tamarillo)

5. 26,190 households received vegetables seeds (carrots, onions, spinach and amaranthus) to improve dietary diversity

6. To improve protein consumption, 205 people were trained in mushroom production, 4,239 mushroom seeds and 15,021 tubes produced and distributed

7. To reduce iron and vitamin A deficiency, a programme of fortified distribution was rolled out. 148 community health workers were trained on the switch to high iron bean products, 612 tonnes of iron-rich fortified beans were produced, 122,225 families received seeds for fortified beans and 2 million cuttings of vitamin A rich orange sweet potatoes were distributed to farmers for planting

8. To improve child nutrition levels, 1.5 million litres of milk were distributed to school children through the One Cup of Milk per Child programme

9. A major awareness campaign across the country aimed to improve nutrition through fostering behavior change. Campaigns have focused on increasing milk consumption (through Umuganda, the annual AgriShow, the World Food Day proramme), encouraging breastfeeding and infant nutrition through the 1000 days campaign in collaboration with MINASANTE, increased fruit and vegetable consumption encouraged through radio, TV and extension workers

10. Strategic planning has also improved. The Nutrition Action Plan (NAP) was validated by agricultural and health sector stakeholders, and the Joint Action Plan to Eliminate Malnutrition for 2013-2014 is prepared for implementation.

Nutrition will continue to be an important area for the sector over the next five years under PSTA III. Nutrition is now included in Programme 1, to better integrate activities with crop and livestock production and to ensure the issue is prioritized in budget and delivery. PSTA III lines of action follow the NAP and include growing nutritious kitchen gardens, improving nutrition related knowledge, bio-fortified food distribution, expanding nutrition based programmes (Girinka and One Cup of Milk per Child) and strengthening Rwanda's food information systems to better mitigate and manage food distribution.

Figure 16: Milk distribution for school children through One Cup programme

1.9.6. Private Sector Development

In the context of the development of PSTA III, MINAGRI senior staff held a series of sessions during Q4 of 2012 to rethink the way the ministry supports an increase in private investment in the agriculture sector.

The two primary goals of PSTA III are to (1) To transform Rwandan agriculture from a subsistence sector to a market-oriented, value creating sector and (2) To grow the agriculture sector as rapidly as possible, both in relation to production and commercialisation, in order to increase rural incomes and reduce poverty. These overarching themes require new skills and structures in the ministry as well as improved coordination between MINAGRI, RDB and other government institutions. Furthermore, in order to facilitate the move to a commercial sector and to leverage the level of investment required to achieve overarching targets, further involvement of the private sector is key. Private sector development was focused on in 2011-2012 through involvement in the Grow Africa forum. In 2012-2013, the Ministry has continued to work with Grow Africa, but has also institutionalised a private sector focused approach.

In January 2013, the ministry actively supported preparations for the agriculture sessions at the World Economic Forum in Davos and the Permanent Secretary attended on behalf of the Rwandan agriculture sector. Later in the year in May 2013, the Honorable Minister of Agriculture attended the Grow Africa Forum held in conjunction with the World Economic Forum in Cape Town. Several agencies and development partners worked in collaboration to prepare for attendance at Grow Africa, The Hon. Minister spoke on several panels on behalf of Rwanda and presented investment opportunities to potential investors in group country sessions and one on one meetings.

Based on learning from the ministry's involvement in international dialogue around private investment in the agriculture sector and considerable thinking across players in the Rwandan agriculture sector, the ministry realised the need for dedicated staff to facilitate the operationalization of agribusiness investments. The RDB Agriculture Department focuses on investment promotion, but there was a clear gap in the ability for RDB to coordinate with the ministry and other agencies relevant to investment in the sector. At the end of Q4 2013, the ministry recruited the first staff member to the Agriculture Delivery Unit and will carry forth recruitment during the next fiscal year. Alongside hiring, RDB and MINAGRI are working closely together to delineate clear roles and responsibilities and develop systems to better coordinate across institutions in the agriculture sector ultimately aiming to increase the number of operationalized investments.

In the next fiscal year, MINAGRI will continue to collaborate with private investors to facilitate their leadership of the sector. With preparation of the new round of CAADP II, a major agri-business investor forum is planned, and will be launched with the PSTA III Agricultural Investment Plan, identifying sector funding and investment opportunities.

Figure 17: A demonstration plot for private company Kenya Seed Co., MINAGRI hopes to attract more private companies into the sector to improve efficiency and quality

Picture 2: A view of a tea estate from above, the national tea programme is managed by NAEB

Section 2: EDPRS Objectives, CPAF Targets and Development Partner Coordination

2.1 Performance in 2012-2013 EDPRS/CPAF

This year, the Ministry made good progress in achievement of EDPRS/CPAF targets (table 7). There were six targets, relating to soil erosion, marshland development, fertilizer use, extension, key crop production and livestock intensification. Five of the six were rated as green, which means they are on track and reached or exceeded the targets set. The use of mineral fertilizer was rated amber, because the amount used in 2012-2013 was a decrease from 2012. This is partly explained by issues during the privatization of the fertilizer distribution network and the new cash payment system. There are now multiple private actors engaged in the market, and use should increase as the market becomes more efficient and incentive oriented. Extension workers will also continue to explain and demonstrate the benefits of fertilizer use. Soil conservation *appears* to be below target. However, this is explained by the new baseline methodology, which presented a more accurate representation of the current status of soil erosion protection infrastructure and is a positive development overall. As such, the target was achieved and we now have a more accurate understanding of the landscape.

Other indicators showed promising progress. The area of marshland developed exceeded the target by 721 ha, and this will continue to increase under PSTA III programme 1. The ratio of extension workers to households is significantly lower than the target, and this is important as it allows extensionists to invest further in individual farmers they work with, and to identify and address their needs. The production of food security crops also significantly exceeded the target, representing the success of Season A and B production, and the benefits of interventions to increase yields and expand the area under cultivation. Finally, the percentage of livestock in intensive systems also far exceeded the target, a 10 percentage point increase from 2012. This represents the benefits of the Ministry's commitment to developing Rwanda's animal resource sector.

EDPRS STRATEGIC OBJECTIVES	EDPRS & PSTA III STRATEGIC OUTCOMES	INDICATORS	PERFORMANCE			
			Status in 2012	Target 2012/13	Actual 2012/13	RAG Rating
1. Increased economic growth	**1.5 Increased agricultural productivity**	1.5.1 Proportion of arable land sustainably managed against soil erosion (%)	NA	95	73 (as per 2013 Soil Erosion Baseline Report – **see Annex III** and document for more details)	
		1.5.2 Area of marshland developed for agriculture use (Ha)	22,681	24,000	24,721	
		1.5.3 Mineral Fertilizer used (MT)	46,000	56,000	39,000	
		1.5.4 Farm households to extension ratio	1:839	1:1,000	1:600	
		1.5.5 Production of key food security crops (1,000 metric tons cereal equivalent)	3,133	3,235	3,790 (**see Annex IV** for details)	
		1.5.6 Percentage livestock in intensive systems (%)	60	62	70	

Table 7: EDPRS/CPAF scoring table FY 2012-2013 (MINAGRI)

2.2 Aid Coordination

Agriculture Sector Working Group

There were seven Agriculture Sector Working Group (ASWG) meetings throughout FY 2011-2012, and two Joint Sector Reviews held in September and June. Meetings are chaired by the Permanent Secretary and co-chaired by the World Bank. These meetings are an essential forum for coordination around key agricultural development issues, and are attended by all sector government agencies and development partners. Participants discuss the progress of CPAF/EDPRS indicators and Policy Actions, and meetings are also a platform to discuss cross cutting issues and new strategies or innovations in the sector. This year stakeholders also gave feedback regarding the development of PSTA III through a participatory all day workshop. This year, the following policy actions were completed by the ASWG (table 8):

Policy Actions 2012 -2013	Progress	RAG
Endorse with ASWG, a new baseline on the proportion of arable land sustainably managed against soil erosion using the new methodology developed in the previous financial year	The policy action was approved and validated by ASWG on 19th Feb 2013	
Endorse with ASWG irrigation scheme management models that include the monitoring of environmental management plan	The policy action was approved and validated by ASWG on 26th June 2013	
Undertake and publish an assessment of the fertilizer strategy, including impact of exit strategy on access and sustainability of fertilizer use and private sector participation. commit to deliver on phase I of the fertilizer privatization	The policy was approved and validated by ASWG on 26th June 2013	
Endorse with ASWG, agriculture service center (MCCs, Agro dealers, CCIs) implementation road map	The policy action was approved and validated by ASWG on 30th May 2013	
Endorse with ASWG, feeder roads standards & maintenance framework	The policy action was approved and validated by ASWG on 26th June 2013, and has been validate by the Ministry, Districts and other stakeholders	
Review and endorse with ASWG, and update the agriculture Mechanization Strategy with emphasis on private sector involvement.	The policy action was approved and validated ASWG on 23rd April 2013	
Update and endorse with ASWG the Dairy Strategy with particular focus on marketing and value chain development	The policy action was approved and validated ASWG on 23rd April 2013	

Table 8: Policy action achievement for FY 2012-2013

Sector-Wide Approach Group

The Sector Wide Approach (SWAp) group met four times in FY 2011-2013. As with the ASWG, the SWAp group is chaired by the Permanent Secretary and co-chaired by the World Bank. The SWAp committee is a sub-set of the ASWG and is focused on systemic strategic issues in the agricultural sector. Objectives include improving aid coordination, assisting in the preparation of Joint Sector Reviews (JSR), supporting the MINAGRI planning unit particularly in budgeting, expenditure tracking, monitoring and evaluation, ensuring collaboration with the ASWG, and providing a forum for budget support donors to meet their fiduciary oversight requirements. In the last financial year the SWAp provided inputs related to the development of PSTA III, the costing and investment plans and preparation for CAADP II.

Picture 3: Terracing built and maintained by communities in Karongi District under the World Bank LWH project

Section 3: Project and Program Implementation

Program One: Intensification and Development of Sustainable Production Systems

SP 1.1 Sustainable management of natural resources, water and soil conservation

1. LWH – Land Husbandry, Water Harvesting and Hillside Irrigation Project

Terraces constructed by LWH in Karongi

Basic Information	Project cost: 113.13 million USD Donor: IDA, GAFSP, USAID, CIDA Government contribution: 7.8 million USD Implementation starting date: June 2010 Scheduled Completion date: December 2015 Eventual Extension: Not yet decided
Mission and Purpose	The objective of the LWH project is to increase the productivity and commercialization of hillside agriculture in target areas. It has three main components: 1. Capacity development and institutional strengthening for hillside intensification 2. Infrastructure for hillside intensification 3. Implementation through the Ministerial SWAP Structure
Achievements 2012-2013	**Capacity Development and Institutional Strengthening:** ○ **Strengthening Farmers Organizations:** The list of LWH beneficiaries was updated and it was established that the number of direct beneficiaries organized in SHGs increased from 17,434 to 21,180 individuals and the total number of beneficiaries in Project targeted sites reached 92,381. A new cooperative was formed after building the capacity of Self Help Groups (SHG) in June 2013 composed of 57 SHGs, 1064 members including 454 women. Capacity building in phase 1 B sites continued, with cooperative formation due at a later date.

- **Water Users Associations (WUAs):** WUA beneficiaries were identified in sites of projects Phase 1A and B, with mobilization of farmers and local leaders. WUA were formed and management committees were elected by farmers ahead of infrastructure construction to start exercising their responsibility. In Phase 1A sites WUA were also formally registered, and two now have a District Licence to operate and one is in the process. In all sites, members were trained on roles and responsibilities. To improve members' skills, the project organized study tour of the elected committees of Karongi 12, 13 and Nyanza 23 for experience sharing and learning at Nasho hillside irrigation infrastructures. The study tour helped the members to understand organizational management and maintenance of hydraulic infrastructure.

- **Extension Services:** 2,120 lead farmers were trained as trainers, an approach chosen to ensure effectiveness in extension among farmers who constantly learn from each other. This complements Tubura field officers' training. Training In IPM has also been delivered in Season A and B in collaboration with RAB, for maize, beans and soybeans on LWH sites.

- **Compost Making:** Hillside agriculture is characterized by declining fertility and quality compost can increase fertility and productivity, but is not available. Farmers on LWH sites are now trained extensively in compost making for their fields and selling. Beneficiaries include landless and youth, and now 99% of farmers use compost, from a baseline of 0%. By the end of season 2013 A, RwF 500 million had been generated by 387 farmer groups selling surplus compost. The use of compost has also increased crop yields: Irish potatoes from 3 t/ha to 18 t/ha, beans from 0.6t/ha to 3.6 t/ha and from 0.8 t/ha to 3.4 t/ha. To ensure sustainability the project will continue to trained farmer groups. So far, 15,680 tons of compost manure has been prepared across all Project sites.

- **Horticulture Development:** Activities focused on seven sites, and 340,000 fruit trees were planted on terrace embankments, with 86% success. The project is supporting farmers with demonstration banana planting material and on site nurseries have been established through the private sector, with capacity to produce 360,000 avocado and 60,000 mango seedlings, tp be planted September 2013. Communities also received training on horticulture and nutrition, including kitchen gardens. 2,925 lead farmers, with 1,270 women, were trained and 5,910 kitchen gardens were planted

- **Marketing:** Training materials were updated and developed to include marketing principles, contract farming, entrepreneurship, business plan development and financial management. Cooperative boards, marketing committees and accountants in phase 1A sites were trained. Lead farmers in Phase 1B sites were trained on similar topics and post harvest techniques, and participated in study tours including the June 2013 AgriShow. For season 2013 gross revenues were RwF 481 million, and an average of 77% of produce was marketed. Post harvest infrastructure including 14 storage facilities and 12 dryers were installed in phase 1A sites, and 10 storage facilities, 3 collection centres and 12 dryers are currently under construction in phase 1B sites.

- **Rural Financial Service Development:** This is linked to the training above. Farmers in Karongi developed a plan for mushroom farming, and RAB has trained 86 farmers in cultivation and agri-business. Capacity building for 21 SACCOS was provided to enable improved financial service delivery for rural communities, including development of viable load proposals. Farmers in SHGs are now able to save to access credit. Farmers were also trained in saving culture, and savings in season 2013 A increased 59% to Rsf 27 million in season 2013 B. More than 1000 farmers were able to secure loans worth RwF 88 million through SACCOs and COOPECS.

- **Institutional Capacity Building for MINAGRI:** 30 MINAGRI staff were selected for master training programmes in horticulture, post-harvest handling, commercialisation, rural banking and ICT in agriculture. With the current budget, 15 will start training in September 2013. Equipment has also been provided to support lab work and pest surveillance, and are in use at LWH sites. GIS has also been developed and integrated to support the irrigation team, and provide informed feasibility studies for hillside and marshland development. The GIS also supported the design of PSTA III, selection of feeder roads and development of an application to allow sharing of MINAGRI data through the Google Cloud.

Infrastructure for Hillside Intensification:

- **Land Husbandry Infrastructure:** 18,000 farmers and 80 technicians were trained in land husbandry and 40 students were awarded internships to develop skills in land husbandry infrastructure. Land husbandry works are progressing well, and a cumulative area of 8,528 ha has been treated with different techniques including terraces, soil bunds, cut-off drains, waterways, afforestation and reforestation, and 66 ha of irrigation systems.

- **Water Harvesting and Hillside Infrastructure:**

  In phase 1A Sites (694ha):
  - **Nyanza-23 (471 ha):** Irrigation water retaining dam construction and land husbandry in the command area commenced in December 2012 and is scheduled to be completed by December 2013. The overall progress of dam construction at the end of June 2013 was 30%. With the dry season significant progress of works are expected to be made in the upcoming two months. Irrigation structures and command area treatment is concurrently ongoing along with the dam construction in order to complete the work on schedule. The contractor in collaboration with local authorities and project staff will mobilise more technicians to accelerate the construction process.
  - **Karongi-12 (128 ha) & Karongi-13 (95 ha):** Irrigation by stream diversions and rehabilitation of the existing canal systems were designed and tender documents completed in August 2012. The contractor started mobilization by January 2013, but real construction commenced in April 2013 with the arrival of the supervision company. The overall progress of construction as end of June 2013 was 20% and construction is scheduled to be completed by Dec 2013.

  Phase 1B sites (849 ha)
  - **Rwamagana-34 (267 ha), Rwamagana-35 (162 ha) and Kayonza-4 (420 ha):** Final design and tenders are due to be completed by mid-July 2013. Construction for these two sites will commence in Nov 2013 and be completed by Oct 2014.

  Phase 2 sites (6,500 ha)
  - With the prospective scale up of LWH , the project has identified a further 37 potential sites of 10,000Ha . 6,500Ha have been targetted for prefeasibility and feasibility studies and detailed designs to achieve the remaining targets of LWH 1 and future scale up of LWH 2.

Implementation through Ministerial SWAP Structure

- **Monitoring and Evaluation:** The project is 2.5 years old therefore a mid-term review was conducted, showing the project has reached and exceeded targets.

- **Financial Management:** LWH has many donors and financial accountability is essential. An independent audit showed proper use of funds, and was recognized and congratulated by the Ministry of Finance, and disbursement of funds remains at a good level.

2. GWLM – Gishwati Water and Land Management Project

Radical terrace construction in Arusha under GWLM for potato and maize plantation

Basic Information	Project cost: 25.78 million USD Donor: Government of Rwanda internal project Government contribution: 5 million USD Implementation starting date: July 2010 Scheduled Completion date: June 2013 Eventual Extension: Not yet decided Implementing Agency: TF Irrigation and Mechanization
Mission and Purpose	Under the Task Force of Irrigation and Mechanization, GWLM aims to implement comprehensive and sustainable land use and water management technologies, which contribute to environmental conservation and improve the livelihoods of Gishwati communities. The project's overall objective is to facilitate a healthy co-existence between agrarian communities and Gishwati's fragile ecosystem, while promoting sustainable economic development to improve the community's quality of life.
Achievements 2012-2013	**Mass mobilization and sensitization** • **Stakeholder Sensitization:** activities targeted site beneficiaries and members of the Reserve Force and focused on implementation and maintenance of land husbandry works, respect of land use blocks boundaries, tree plantation and maintenance and farming techniques on graded terraces. Activties and field visits were organised at the following sites: Busoro/Karago and Kora-Gatagara, Muhe-Bihangara, Muhe-Murambi, Mutaho and Yungwe, where 1844 households were sensitised for adoption of modern and environmental friendly technologies in the area.

- **Mobilisation Campaigns:** Mobilization campaigns and public meetings with beneficiaries were organized in all concerned Sectors across Nyabihu and Rubavu Districts. Meetings with local authorities and other potential partners on the ground were also organized. Currently, the project team has been pursuing the mobilization campaign by preparing local communities to work in the framework of community participatory approach/HIMO. This approach is seen as one among key strategies to involve local communities in project activities implementation. The table below summarises activities in different sectors and cells.

District	Sector	Cell/ Site	No. of Households
Nyabihu	Bigogwe	Muhe	180
		Kora	54
		Arusha	650
		Kijote	215
	Karago	Busoro	325
	Rambura	Mutaho	250
Rubavu	Kanama	Yungwe	170
Total			**1844**

- **Staff Recruitment:** Three land husbandry extensionists were recruited and they are now supporting project implementation. It was hoped that a new technical assistant would be recruited, but procurement did not go ahead.

- **Stakeholder Involvement:** Two steering committee meeting were held to discuss project progress. A major meeting chaired by the Rt. Hon. Prime Minister and all GWLM stakeholders discussed the land distribution under the project, and the PM and Hon. Minister of Agriculture also visited project sites for evaluation.

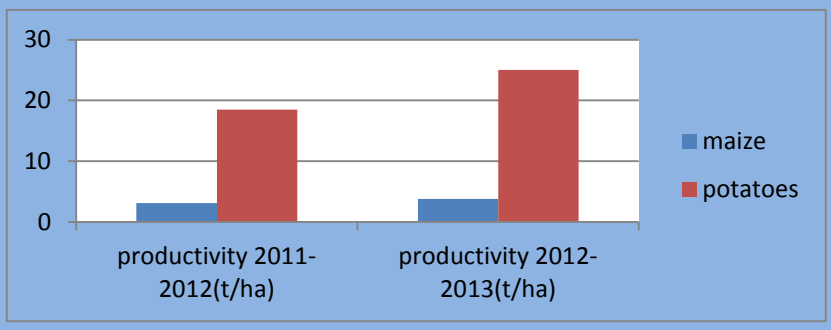
- **Lead Farmer Training:** GWLM trained local lead farmers, SHG members and local government actors in January 2013 in Musanze. 38 famers and six local government representatives attended and the theme was 'Best and sustainable practices of water and land management technologies implemented in cropland and range land use blocks'. GWLM also organised study tours and visits for beneficiaries. In June, 34 farmers and members of SHG attended the AgriShow, where they learned about best practice. GWLM organized this study tour to help local communities from project sites understand the use of various technologies in Agriculture. The visit was a real success and as a result some participants bought power tillers to use on the farm.

Water and Land Management Works

- **Land Husbandry:** This approach is the careful and responsible management of water and land to transform landscapes and rural livelihoods in a protected and sustainably productive watershed. Works have been completed in the following sites: Arusha II, Kora–Gatagara, Muhe-Murambi and Muhe-Bihangara in Bigogwe sector, Mutaho in Rambura sector (Nyabihu District) and Yungwe in Kanama sector. Works are implemented under the MoU with Reserve Force and the technical guiding company Parva. The reserve force contract was started from March 2013 with the aim of hiring enough manpower to develop 500ha. Previously, Parva was working with local people under HIMO. The table illustrates the division of work of the 829 Ha of terracing, work to protect embankments, water conveyance structures and agroforestry.

District	Sector	Site	Terra-ces (Ha)	Water Works (km)	COD (km)	Check Dams	Bank Grass (ha)	Trees
Nyabihu	Bigogwe	Muhe-Murambi	178.7	34.9	20.2	2,247	64.7	36491
	Bigogwe	Muhe-Bihangara	88.0	22.9	3.9	702	25.9	790
	Rambura	Rambura-Mutaho	51.3	21.9	3.6	1,700	23.0	8800
	Bigogwe	Kora-Gatagara	136.2	11.1	8.5	1,681	61.6	53268
	Bigogwe	Arusha II	108.1	59.5	22.6	2,679	30.3	86699
	Karago	Busoro	190.0	19.7	4.1	2,600	89.7	81134
Rubavu	Kanama	Yungwe	76.6	27.4	10.5	2,305	35.6	8484
	Total		**829.0**	**197.4**	**73.4**	**13,914**	**330.8**	**275, 666**

- **Cultivation:** Cultivated crops included: 384 ha of maize, 529 ha of potatoes, 105 ha of beans. Terraces beds are used for cropping and the embankment for forage. Productivity is shown below:



The total cultivated area for 2012-2013 is 755ha and the farmers generated Rwf 1.6 billion.

- **Range Land Development:** 168 ha have been planted with kikuyu grass and Trifolium. 106 paddocks were create in the rangelands of Muhe, Kijote both in Bigogwe Sector and Yungwe in

Kanama sector. 67,841 trees were planted in Kijote, Muhe, Arusha and Yungwe as a live fence between crop and rangeland. The trees were from the district's nurseries. During range land development and rehabilitation, challenges including lack of community buy-in, overgrazing and destruction by domestic animals.

- **Forest Area Regeneration:** Plantation activities continued in the last fiscal but at a slower pace, with indigenous species among those produced: Pordocarpus falcutus, Newtonia buchanani, Carapa grandiflora, Albizia gumifera and Polycia fulva. The activities were under the first contract between the RNRA and the Ministry of Defence/Reserve Forces for planting indigenous tree species. Other activities included weeding, replacement planting and guarding. Unfortunately, activities were affected by seedling availability. The target area for this activity is 500 ha.

- **Mizingo River Management:** Works to rehabilitate Kinamba Bridge started March 2012 by Adecobr Enterprise, supervised by Ace Consultancy, to mitigate flooding of Kinamba lowland. Bridge construction was supported with roadside channels, retaining walls, filling and compaction of the main road with lateritic soil. The Mizingo River main drain was also reinforced to better channel water to Kinamba and drain upstream terraced. Works were completed in December 2012, the downstream branch will be constructed in the next fiscal year.

- **Land Redistribution:** Following the meeting held with all stakeholders and chaired by the Rt. Hon. Prime Minister, and after the decision was endorsed by the cabinet in October 2012, the exercise of redistributing land already protected started in February 2013 and is ongoing in Gishwati area.

- **Monitoring and Evaluation:** PCU has conducted regular field visits in the Project sites. Visits focused mainly on land demarcation and land use bloc delineation. Two steering committee meetings discussed project progress of key issues, and visits by high level stakeholders generated advice to improve project deliverables and effectiveness.

An overview of irrigation and terracing in Gishwati, funded by GWLM.

SP 1.2 Integrated development and intensification of crops and livestock

The Rwanda Agriculture Board (RAB) is the primary institution to develop and implement research and extension initiatives which integrate sustainable crop production, animal resources and natural resource management. The projects under this sub-program and others are implemented by RAB. Further information can be found in the RAB 2012-2013 Annual Report.

1. GIRINKA – One Cow per Poor Family Program

Productive milk cows such as the one in the image are given to poor households as assets

Basic Information	Project cost: 2.5 billion RWF Donor: Government of Rwanda Government contribution: Internally funded project Implementation starting date: November 2006 Scheduled Completion date: December 2014 Eventual Extension: Not yet decided Implementing Agency: RAB
Mission and Purpose	One Cow Per Poor Family distributes cows to selected poor households and has three primary objectives: 1. Fight malnutrition through provision of dairy products 2. Increase household income through a productive asset 3. Increase crop productivity through use of manure
Achievements 2012-2013	**Cow distribution to poor families** • In FY 2011-2012, 1000 heifers were purchased. Cow distribution occurs through three channels: 'pass on' calves born under the program, decentralized GIRINKA programs and fundraising initiatives. RwF 115 million worth of veterinary drugs were also procured to be distributed with the heifers. **Support to MCCS** • 30 MCCs are now functional, basic lab equipment was supplied and 2000 milk cans were bought to be distributed to farmers. **Support to Animal Health** • Almost 10,000 farmers were trained in animal health, a feedlot was established in Kayonza, 2000 hormone doses were procured and lab equipment for disease management was purchased.

2. LISP – Livestock Infrastructure Support Program

Milk Collection Centers (MCCs) constructed in Rutsiro supported by LISP to develop the dairy value chain

Basic Information	Project cost: 21.8 million UAC Donor: African Development Bank Implementation starting date: June 2011 Scheduled Completion date: December 2015 Eventual Extension: Not yet decided Implementing Agency: RAB
Mission and Purpose	The overall goal of LISP is the creation of an enabling environment that will stimulate the development of a modern livestock industry in Rwanda through value addition and access to markets. The specific objective of LISP is to build the necessary infrastructure and services that will contribute to the development of a sustainable and profitable livestock production and marketing and overall improvement of the livestock industry in Rwanda. The program comprises of two components and sub-components namely: **1. Livestock infrastructure:** 1.1. Community livestock infrastructure 1.2. Public livestock infrastructure **2. Food security enhancement and capacity building:** 2.1. Support to One Cow per Poor Family 2.2. Support to productivity enhancement technologies 2.3. Capacity building
Achievements 2012-2013	**Livestock infrastructure:** • **Milk collection centers (MCC)**: Construction work for 33 MCCs is ongoing, with the provisional completion and launch of 25. So far, 18 of them have received the appropriate equipment including milk cooling tanks, pumps, pipes, stainless steel cleaning vats, milk cans, technical manuals and generators. New potential beneficiaries of the MCCs were identified and mapped. The draft training strategy for farmer to farmer training was developed and adopted by all dairy sector development partners including MINAGRI, RAB, RALIS, SNV, Land O' Lakes (RDCP II), Send A cow Rwanda, EADPD and HPI. 83 MCC cooperative members of a total of 94 were assessed for the training.

- **Livestock watering system (LWS):** The LWS study was completed and construction contracts signed for the Nyagatare site.

- **Mukamira Dairy*:*** This dairy is a private public partnership imitative started in 2010 by 16 local dairy farmer cooperatives and the Government of Rwanda. Construction is ongoing and the final Environmental Impact Assessment if complete and submitted.

- **Construction of Hay Storage Facility:** Two hay storage facilities were built in Nyagatare and Bugasera.

Food security enhancement and capacity building

- **Support to One Cow Per Poor Family:** 4,329 cross breed heifers were purchased and delivered

In the 2012-2013 FY, construction works were completed for Mukamira Dairy. The photos show the new factory and administration block

Land excavation works were also carried out, a total of 240 km of the 287 km planned were excavated

3. Animal Genetic Improvement Programme

Basic Information	Project cost: 770 million RWF Donor: Government of Rwanda Government contribution: Internally funded project Implementation starting date: July 2012 Scheduled completion date: June 2013 Eventual Extension: Not yet decided Implementing Agency: RAB
Mission and Purpose	The Genetic Improvement Program has three specific objectives: • Increase milk production • Strengthen delivery of Artificial Insemination (AI) • Contribute towards improving the efficiency and productivity of the animal resources subsector in a sustainable manner, promote public health and support marketing of both livestock and livestock products to contribute to the national efforts of poverty reduction, improved food security and better rural incomes.
Achievements 2012-2013	**Improved Practices to Avail Good Quality Semen** • Lab equipment was procured and the labs rehabilitated to improve production. 500 types of vet drugs were purchased for Masaka bull stations, and the bulls and staff were insured. 55,758 doses of conventional semen were produced, 240 exported to the region, and two more bulls purchased to create a quality supply. **Improved Semen Supply System and AI Inputs** • The supply of AI has been strengthened at the district level, and new AI kits were purchased and disseminated alongside extension material. Eartags and applicators were also procured and distributed. A census of 10,000 AI offspring was conducted to evaluate the project success. **Embryo Transfer Programme and Breed Preservation** • Production of fresh embryos is ongoing, and the production of bank germplasm at Masaka Bull Station. 101 new inseminators have received training, 30 inseminators have received refresher courses and 800 farmers were trained in collaboration with Girinka. **Policy Development and Legislation** • Rules being finalised re semen production, storage and transport

4. Development of the Poultry Industry

Chickens in the Rulindo District Chicken Farm

Basic Information	Project cost: 220 million RwF Donor: Government of Rwanda Government contribution: Internally funded project Implementation starting date: July 2012 Scheduled completion date: June 2013 Eventual Extension: Not yet decided Implementing Agency: RAB
Mission and Purpose	The Poultry Industry Development program aims to: • Increase the production of chicks in Rwanda • Distribute chicks and support the Rwandan poultry industry • Promote safe poultry production in Rwanda • Develop capacity in poultry management and the value chain
Achievements 2012-2013	**Revitalize the poultry industry:** • **Increased Chick Production:** 5,000 parent stock day old chicks were purchased, and 120 tonnes of high quality feed was imported for feeding parent stock, and drugs, vaccines and equipment was bought for Rubirizi Hatchery. • **Chick Distribution:** A mini-hatchery was established in Rulindo District, , and 5,000 fertilised eggs distributed to private hatcheries to support private sector development • **Capacity Building:** Poultry related extension was strengthened. Five poultry officers are now located in RAB zones to support farmers, 31 district vets were trained in poultry health and 1,120 farmers were trained in safe poultry production. Poultry production was also mapped. • **Research:** A demonstration farm with Kuroiler Breed chickens was established at the Songa Station, and 200 Kuroiler and indigenous chickens reared.

5. APEL – Support to Small Stock Development

APEL distributes small stock to farmers and encourages improved effective and sustainable production methods. This photo shows beneficiary Philomene Muhorakeye and her 'golden' pig

Basic Information	Project cost: RwF 3.95 million Donor: Belgian Development Agency (BTC) Implementation starting date: January 2009 Scheduled completion date: January 2013 Eventual extension: Project has ended Implementing agency: RAB
Mission and Purpose	The project's general objective is to contribute to poverty reduction by improving the living standards of small stock farmers. Expected project outputs include: 1. Small stock breeding by poor farmers using improved, effective and sustainable production methods 2. Goat, sheep, pigs, rabbits and poultry are subject to genetic improvement and appropriate breeding techniques 3. Private sector development of the small stock value chain 4. MINAGRI capacity is strengthened at national and district level The project targets five districts: Ngororero, Huye, Nyamagabe, Nyaruguru and Gisagara, which were selected due to having the highest percentage of food insecure households.
Achievements 2012-2013	**Support to Small Livestock Sector Development** • Construction of sheds to house and protect animals:

District	Pigs	Goat	Sheep	Rabbit	Total
Huye	996	904	0	40	1 940
Nyamagabe	1 000	907	0	37	1 944
Gisagara	972	712	0	52	1 736
Ngororero	1 695	640	345	2	2 682
Nyaruguru	300	200	0	0	500
Total	**4 963**	**3 363**	**345**	**131**	**8 802**

- Distribution of small livestock:

District	Pigs	Goat	Sheep	Rabbit	Total
Huye	1 118	3 434	0	200	4 752
Nyamagabe	2 080	1 800	0	185	4 065
Gisagara	1 698	3 765	0	260	5 723
Ngororero	1 898	1 410	730	12	4 050
Nyaruguru	1 100	4 744	1048	250	7 142
Total	**7 894**	**15 153**	**1 778**	**907**	**25 732**

- Project beneficiaries according to species:

District	Pigs	Goat	Sheep	Rabbit	Total
Huye	1 118	1 890	0	40	3 048
Nyamagabe	2 080	907	0	37	3 024
Gisagara	1 698	1 898	0	52	3 648
Ngororero	1 898	705	365	2	2 970
Nyaruguru	1 100	2 480	524	40	4 144
Total	**7 894**	**7 880**	**365**	**171**	**16 834**

- Animals were procured for breeding, including 120 pigs which were sent to research insitutes. Three AI kits were also provided to institutes and the Kisaro pig breeding centre.

- A large amount of small stock related infrastructure was also build and rehabilitated. The satellite veterinary laboratories of Huye and Nyagatare were rehabilitated, two animal markets were built in Nyamagabe, and four slaughterhouses and four animal markets were built in Nyaraguru, Huye, Gisagara and Ngororero. This infrastructure allows better processing and marketing of meat products. Management is organised at District level by local associations of butchers.

A female farmer and her son cradle their rabbits received through APEL

SP 1.3 Marshlands development

1. RSSP – Rural Sector Support Project

Rice harvesting in Muvumba IV-COPRORIKA. Farmers supported by RSSP dry their rice in the sun.

Basic Information	Project cost: 80 million USD Donor: World Bank Government contribution: 5 million USD Implementation starting date: June 20012 Scheduled Completion date: October 2017
Mission and Purpose	RSSP has two main objectives: • Increase agricultural production and marketing in an environmentally sustainable manner in marshland and hillside areas targeted for development by the project • Strengthen participation of beneficiaries in market based value chains
Achievements 2012-2013	**Increased Production through Marshlands and Terracing** • **Marshland Development:** Rehabilitation and development works were completed in the following marshlands: Cyili (328 ha), Rwagitima extension (300 ha), Gacaca (450 ha). Rehabilitation involved construction of dams and irrigation networks. New development focused on increasing productivity. Farmers in project sites were trained in improved farming methods, especially the use of inputs. Farmers Training focused on on quality compost making and now 4,381 tons have been produced by farmers for season 2014A. Additionally, to make rice cooperatives more business oriented, they have been linked to BDCs and trained on entrepreneurship, business management and marketing. The plan is to develop a further 7000 ha, although current financing is available for 6000 ha. The project will also promote irrigation on marshlands (200 - 300 ha) where groundwater conditions are appropriate. • **Marshland Design Studies:** Marshlands design studies completed for Kirimbi, Rwangingo-Karangazi, Rwinkwavu, Rugende & branches, Mushaduka,Mirayi, Kamiranzovu, Nyabirandi and Ndongozi. Procurement has started for Rwangingo-Karangazi (925 ha) and negotiations for the remaining 1,810 ha is ongoing.

- **Soil Conservation:** Land husbandry infrastructure was completed across five sites, of 2,994.92 ha, including Rwinkwavu: 1,272.12 ha; Gacaca: 593.35 ha; Rwagitima: 350.52 ha; Kirimbi: 340.93 and Cyili: 438 ha. The Project target is to rehabilitate 17,000 ha of hillsides over the five year period at a cost of USD 13.6 million, following successful land husbandry approaches used in LWH. RSSP also organised trainings for District and company technicians, foremen and the manpower team before works started. The project arranged for further training of lead farmers for the maintenance of land husbandry infrastructures. About 18,000 manpower and 120 technicians were trained in land husbandry technologies.

Increased Marketing in Project Sites

- **Post Harvest:** The project constructed 8 storage facilities and 35 drying bays on all five marshlands and adjacent hillsides to cope with the expected increased production both of quantity and quality.

Strengthen Participation of Beneficiaries in Value Chains

- **Cooperative Capacity Building:** The Project has supported group formation, and strengthened Water User Associations (WUAs) and cooperatives to improve their governance and management capacity to deliver quality services to their members. Seven cooperatives in marshlands and on the surrounding hillsides were formed, and RSSP also supported cooperatives to become certified seed producers. These cooperatives will also become legal bodies soon. Cooperatives were also supported to develop and strengthen sound and transparent financial and procurement management.

- **Beneficiary Identification:** A survey identified that RSSP's direct beneficiaries included 57,532 individuals in small groups, with 42% women. If household members are taken into consideration, this figure increases to 179,158 individuals, 46% being women.

- **Water User Associations:** RSSP supported formation of 17 WUAs who have submitted their application for official recognition to Rwanda Governance Board (RGB) and 10 certificated have been issued. Three more District Irrigation Steering Committees were also established, bringing the total to 11. Rice plot maps were developed for five schemes, which shall be used by WUAs to identify and monitor water usage and fee collection.

- **Training in Value Chain Participation:** Beneficiaries were trained in topics including IPM, compost making, managing seasons, entrepreneurship and business planning, financial management, marketing principles, Small Enterprise Management, Strategic management and procurement procedures.

SP 1.4 Irrigation development

1. PADAB – Bugesera Agricultural Development Support Project

Protection dykes allow maize cultivation without compromising the ongoing marshland development work

Basic Information	Project cost: 18.7 million USD Donor: African Development Bank Government contribution: 4.3 million USD Implementation starting date: October 2006 Scheduled Completion date: December 2013 Eventual Extension: None
Mission and Purpose	The project's overall objective is to strengthen food security. In particular, the project aims at increasing agricultural production in the Bugesera region through the irrigation of a 1000 ha marshland, protecting catchment basins, improving rain-fed farming on nearly 5 000 ha of hills and strengthening the capacity of farmers and supervision institutions.
Achievements 2012-2013	**Irrigation and Catchment Basin Development:** • The development of Rurambi marshland (1000ha) for rice cultivation was completed, and the final handover stage is ongoing. • A farmer cooperative (CORIMARU) for rice production was established and a water users organization set up for water management and infrastructure maintenance. Members (starting with committees) were trained in their respective key functions for sustainable use of infrastructure built by the project. • Five rice ground dryers are still under construction, 40% complete. • Community work to protect against erosion excavated ditches across 500 ha and planted 120,000 trees to increase protection around Rurambi watershed. Local watershed management committees were also set up in Mwogo and Juru Sectors. The cumulative area protected was 4,422 ha.

- The project supported farmers around the marshland rehabilitate cropping areas and plant banana. Five ha were rehabilitated and 5,335 banana plantlets produced from macro-propagation and transplanted. The aim is to further protect the marshland.

- A contract was signed with the National University of Rwanda to carry out a study on the soil and irrigation water baseline status for future reference in relation to development in Rurambi marshland.

Agriculture Development:

- Farmers starting using project infrastructure in 2013 B, and 250ha of rice was cultivated by 1239 farmers from Bugesera and Kicukiro District. The first rice harvest produced 880 MT. Farmers were linked to Mayange Rice Mill to sell their produce.

- Skilled RAB technicians working with farmer field facilitators trained by the project delivered on the job training for farmers cultivating rice for the first time.

- A study tour was organized for the rice cooperative with 76 people to witness the progress made in other rice schemes in the country.

- 22 cooperatives (with 1,677 members, 50% being women)were established on hillsides focused on banana, vegetables, fruits, mushroom and cassava. Cooperatives were supported to formulate small projects and seek funding from local SACCOs, and four projects were approved and received funds.

- Cumulatively, the project organized 408 Farmer Field Schools (FFS) and trained 8,301 farmers (54% of women) in IPM and modern agricultural techniques and organized training for socio-economic development officers from each Cell for follow up

- With the FFS approach, yields significantly increased, e.g. for FHIA 25 et FHIA 17, bunches increased from 15 kg up to 120 kg, rice increased to 8.2 MT/ha, and cassava rose from 15MT to 40MT/ha.

- Training in managing market infrastructure was deliver, generating an increase in District revenue collection from Rwf 350,000 up to 1 million Rwf/month.

2. PAIRB – Bugesera Natural Region Rural Infrastructure Project

Silos constructed by PAIRB of 20,000 MT each

Basic Information	Project cost: 2.25 million USD Donor: African Development Fund Government contribution: None Implementation starting date: October 2009 Scheduled Completion date: December 2015 Eventual Extension: Not yet decided
Mission and Purpose	PAIRB aims to enhance food security in the Bugesera region through a sustainable increase in agricultural production.
Achievements 2012-2013	**Irrigation Development:** • Gashora marshland development works (for rice cultivation) started slowly in December 2012 with further contractual delays meaning and heavy rains meaning by June 2013 works were 3.2% complete, 7 months into a 12 month contract. • Lakes and marshlands were developed using community works (Umuganda) and local watershed management committees established in Rweru and Gashora Sectors. In total 20,100 ha were protected against erosion by ditch excavation. • 3,523 farmers (including 40% women) were trained in modern agricultural techniques and pest management through farmer field schools (FFS) generating an average of 18MT/ha cassava yield. • The FFS approach was extended to cassava, banana, maize and rice farmers and three new technologies were introduced: banana and pineapple macro-propagation and fruit grafting. • 446 cows distributed to poor families bring to 1000 the total heifers distributed in the project zone. Beneficiaries have milk for household consumption and also the opportunity to generate up to 45USD per month income from selling milk in their neighborhood. 264 goats were also distributed to vulnerable households, and the project has now distributed 1,330 goats distributed to 444 families.

Other Rural Infrastructure Development:

- Technical studies were completed for 54 km of rural access road construction in Rweru and Gashora Sector.
- Construction was started and is ongoing for two milk collection centres in Gashora and Ruhuha
- Three silos of total storage of 6000MT were built in Mayange Sector, and equipment installation is almost complete.
- The construction of four seed sheds with a capacity of 300MT each is ongoing in Rweru, Gashora, Kamabuye and Ngeruka Sectors.

Ongoing construction of the Milk Collection Centre in Gashora

Completed metallic silos of 60,000MT storage total

3. KWAMP – Kirehe Community Based Watershed Management Project

Kinoni I Dam constructed under KWAMP as the first stage of a major irrigation scheme

Basic Information	Project cost: 49.32 million USD Donor: The International Fund for Agricultural Development Government contribution: 9.5 million USD Implementation starting date: June 2009 Scheduled Completion date: December 2016 Eventual Extension: Not yet decided
Mission and Purpose	KWAMP is an agricultural investment project which aims to develop sustainable and profitable small-scale agriculture in Kirehe District. There are three project areas: • Local institutional development • Agricultural intensification • Rural feeder roads.
Achievements 2012-2013	**Local institutional Development:** • **Support to agricultural transformation:** KWAMP supported District development through construction of three Community Innovation Centres (CCIs) and supply of equipment. The project also funded 15 natural resource management proposals and 10 business cases from villages and cooperatives. 15 cooperatives were supported to become more professional and market focused. • **Water management:** 11 watershed management plans were completed and submitted to the implementation unit. Water User Organisations were also supported in committee formation, training and the legal registration process. **Agricultural Intensification:** • **Value chain development:** Proposals were submitted to local banks to support the value chain development fund (VCDF), and one private company signed the contract, with two more planned for the next financial year. The final report for the Warehouse Receipts system is also now complete.

- **Crop intensification:** KWAMP supported CIP in Kirehe District in 2013 B, providing training for 16,028 farmers from all the villages, establishing 12 farmer promoter groups in each sector and helping to link 19 cooperatives to MFIs and banks.

- **Livestock intensification:** The project distributed animals to poor households in all watersheds including 60 Jersey cows, 300 Saanen Goats, 30 Bucks, and, through the Pass On Gift programme, a further 320 cows, 253 Goats and 136 pigs. 114 flexi biogas systems installed last year are still operational, and a further 10 were installed in this year and are working well.

- **Irrigation development:** Work started to construct four dams in Kinoni and Mwoga watershed and are 90% complete, due to be finished in December 2013.

- **Soil protection:** Soil protection was completed across 13.5 hectares for Sagatare and Cyunuzi dykes. 175,000 fruit trees were also planted to prevent erosion, including mango, avocado and orange, in Mahama and Nasho sectors.

- **Reforestation:** KWAMP supported plantation of Callitris Robusta on 162 Ha, and trained 40 members of the Uburumbuke cooperative who will establish bee hives in the forests.

Feeder Roads Rehabilitation:

- **Feeder road rehabilitation:** The project supported rehabilitation of 10.8km of the Rusozi-Mahama Centre road, completed the rehabilitation of 3.5 km in Nyabegega and Kaziba-Mutakuja, a further 5.5. km at Gatore-Nyarwogo and constructed seven small bridges in strategic locations.

Project Coordination:

- **Project management:** The project is implemented through different partners under the SPIU. Last financial year KWAMP conducted an evaluation regarding grassroots implementation and the mid-term review was completed with positive results. Consultants have also been procured to conduct an impact assessment.

4. GFI – Government Funded Irrigation Immediate Action Irrigation Project

Irrigated maize under a sprinkler irrigation system supported by GFI at a mature stage

Basic Information	Project cost: 50 billion RWF Donor: Government of Rwanda Government contribution: 100% Government funded Implementation starting date: July 2010 Scheduled Completion date: June 2013 Eventual Extension: To Be Decided Implementing Agency: TF Irrigation and Mechanization
Mission and Purpose	The Immediate Action Irrigation (IAI) initiative for food self-sufficiency and livelihood improvement under MINAGRI's Task Force of Irrigation and Mechanization aims for the intensification and modernization of agriculture, to successfully reduce dependence on rain fed agriculture in the Eastern Province, the driest part of Rwanda. The targeted Districts are Kirehe and Nyagatare. The project aims to cover 5,000 ha in three years.
Achievements 2012-2013	**Irrigation and Construction:** • **Canal construction:** A canal of 13 km was built to separate the lake and the Nasho scheme, to protect crops from hippos. A canal of 1.6 km was constructed to drain water in the often flooded area of the Mvumba hillside irrigation scheme • **Feasibility study:** The study was completed for a 2,500 ha scheme in the scale up zone in Nasho, and procurement started. • **Irrigation development:** The following was completed 1. 600 ha for sprinkler irrigation in Nasho valley 2. 400 ha of pressurized irrigation inMuvumba valley 3. 500 ha of centre pivot irrigation in Kagitumba valley 4. 5 WUO and 2 cooperatives established for management **Crop Management:** • **Maize:** 24 shelter were constructed for storing maize and 33 farmers were trained in making animal feed from maize residue **Strategic Development:** • **Management Plans:** The new irrigation policy and action plan were adopted by the ASWG with new management models.

SP 1.5 Supply and use of agricultural inputs

1. Banana Program

The banana program increases productivity, production and management

Basic Information	Project cost: 220 million RwF Donor: Government of Rwanda Government contribution: Internally funded project Implementation starting date: July 2010 Scheduled Completion date: June 2012 Eventual Extension: Yes Implementing Agency: RAB
Mission and Purpose	The Banana program aims to increase the contribution of bananas to both household consumption levels and improved rural incomes, through increasing production and pest management, raising yields and strengthening the value chain.
Achievements 2012-2013	**Banana Planting and Rehabilitation:** • Production was increased through planting 818 ha of banana, 119 Ha of Kamaramasenge and rehabilitation of 21,887.8 Ha of existing banana fields **Improved Yields:** • In the 2012-2013 financial year, 401,402 plants of high yielding varieties were disseminated to smallholder farmer for planting. This will increase productivity, and drive up output. **Improved Pest Management:** • Bacteria wilt control programmes were rolled out across 2,509 ha of banana plantation, adopting an integrated approach to controlling the disease.

2. Agricultural Mechanisation Program

Tractors purchased for lease to farmers under the agricultural mechanization project

Basic Information	Project cost: 1.5 billion RwF Donor: Government of Rwanda Government contribution: 100% Government Funded Implementation starting date: June 2012 Completion date: July 2013 Eventual Extension: Yes Implementing Agency: RAB/TF Irrigation and Mechanization
Mission and Purpose	The Agricultural Mechanization Program, implemented by the Task Force for Irrigation and Mechanization, has two key aims: • To disseminate appropriately scaled mechanization options to farmers throughout the country • To enable access to farm mechanization services through Village Mechanization Service Centers and any other supply channels
Achievements 2012-2013	**Supply of Mechanisation Equipment:** • Equipment was supplied for project implementation, including spare parts for farm machinery, workshop consumables and tires for the centre in Kabuye and fuel. Agricultural farm machinery and attachments were also purchased, including 30 tractors, 2 combined harvesters, 5 heavy duty trailers, 2 maize combined seed planters and spare parts. Two pick up vehicles were purchased to support the mechanization department complete their work. **Insurance for Machinery:** • All farm equipment has been insured for a one year period **Programme Management:** • Management of the VMSCs has been successful including transport and supply of farm equipment, maintenance costs covered and the centre logistics supported. The mechanization department also continues to run well, with mission allowances and salaries paid.

3. Crop Intensification Program

Maize grown with support of CIP, harvested and correctly stored through support in post harvest handing and extension for farmers

Basic Information	Project cost: 9 billion RWF Donor: Government of Rwanda Government contribution: Internally funded project Implementation starting date: September 2007 Scheduled Completion date: None Eventual Extension: Not yet decided Implementing Agency: RAB
Mission and Purpose	CIP aims to increase agricultural productivity by significantly increasing the production of food crops across the country through using: 1. Land use consolidation 2. Improved seed and fertilizer use and 3. Extension service at farm level 4. Post harvest handling and storage initiative CIP focuses on seven priority crops determined by agro ecological zones: maize, wheat, rice, Irish potato, beans, cassava, soy bean and sunflowers.
Achievements 2012-2013	**Land Use Consolidation:** • **Land consolidated:** Under the land use consolidation policy, farmers in a given area with contiguous plots grow specific food crops in a synchronized manner to improve productivity and environmental sustainability. Advantages of land consolidation include: reduced volume/cost ratio, shared logistics and transportation costs of inputs and outputs, increased accessibility of inputs by providing a focused market, increased coverage of proximity extension services, equitable distribution of natural resources such as soil and water and increased land and crop productivity. Under the project last year, land use consolidation during Season A was 749,866 ha (maize: 238,545 ha, beans: 345,201.2 ha, cassava: 79,371 ha, I. potato: 63,868 ha, wheat: 9,330 ha, soybeans: 5,501 ha and rice: 8,050 ha). In Season B land use consolidation was 608,639 ha (maize: 98,601, beans: 321,125, I. potato: 73,195, wheat: 43,800, cassava: 53,844, soybeans: 8,906, rice: 9,168.3). This was achieved farmer mobilization including meetings with local Government at Village, District and Province level, identification and organization of consolidated sites and an awareness campaign local media.

Seed Multiplication and Planting Materials:

- **Increased seed production:** Access to high quality and clean seeds and planting material is a key contributing element towards improved productivity. Pre-basic seed production increased and seeds were distributed to farmers, shown in the table below:

Crop	Amount Distributed
Maize	6,308 Mt
Wheat	1,504.74 Mt
Rice	334.36 Mt
Soybean	312.85 Mt
Cassava	98,588,905 cuttings

Fertilizer Use:

- **Increase access to fertilizer:** Fertilizer use is important for increased crop productivity. Fertilizer use improved from 4Kg/Ha in 2007 to 30Kg/Ha in 2012. However the rate of fertilizer use is still low and in 2012-2013 the following efforts were undertaken so as to stimulate fertilizer demand: awareness creation and sensitizing the farmers on the importance of fertilizer use, building capacity of proximity service providers, farmer facilitators and promoters regarding fertilizer use, voucher printing to increase demand and execute the fertilizer subsidy and enhancing the purchasing power of farmers by linking farmers and agro dealers to financing options through cooperatives, SACCO's, banks, insurances companies and importers. Subsidies facilitated increased access to fertilizers which in turn improved use, e.g. for maize and wheat 800,000-1,000,000 smallholder farmers benefited from affordable fertilizers. Rice, I. potato and vegetable farmers also benefited from affordable fertilizers through the international transport subsidy.

- **Ferilizer distribution:** A fertilizer distribution network system comprising a pool of 19 distributors and 1,062 agro dealers was established, improving the availability and access of fertilizers within proximity of farmers. Agro dealers were trained in business and fertilizer management and certified. As a result the fertiliser distributed through the agro-dealers network improved. Total distribution included 7.1 million Kgs of NPK, 8.6 million Kgs of DAP, 4.9 million Kgs of urea and 20.6 million Kgs overall.

SP 1.6 Food security and vulnerability management

1. One Cup of Milk per Child Program

School children enjoy milk distributed by One Cup of Milk per Child

Basic Information	Project cost: 1 billion RWF Donor: Government of Rwanda Government contribution: 100% Government funded Implementation starting date: June 2012 Scheduled Completion date: July 2013 Eventual Extension: Yes
Mission and Purpose	One cup of milk per child has five key, complementary objectives: 1. Reduce malnutrition in children 2. Support children's development and capacity to learn 3. Provide children with a balanced diet and instill good dietary practices 4. Reduce post-harvest losses in the dairy value chain 5. Develop the Rwandan dairy sector through increasing demand
Achievements 2012-2013	**Addressing Childhood Nutrition:** • 2,422,041 litres of milk was purchased and supplied to 112 schools now are in program. 83,375 children attending programme targeted school consumed milk, increasing their calorie and protein intakes. • The 112 schools involved in the programme were monitored to ensure appropriate distribution of the milk to children. • Communication and sensitization meetings were held with the schools to raise awareness of the importance of milk consumption. Some teachers have also been involved in stealing milk, and the programme is working to tackle this issue. Improving the storage at school sites is also a priority area, to ensure milk does not spoil.

Program Two: Support to the Professionalization of Producers

SP 2.1 Promotion of farmers' organizations and capacity building for producers

1. Support to SPAT II

Increase in banana production as a result of project interventions and training

Basic Information	Project cost: 18.6 million Euros Donor: BTC Government contribution: 620 thousand Euros Implementation starting date: July 2011 Scheduled Completion date: 2016 Eventual extension: Not yet decided Implementing agency: RAB and CICA
Mission and Purpose	The project's goals it to increase agricultural outputs and incomes through sustainable production systems for all groups of farmers, and to ensure food security. The specific objective is improved access to advisory services for crops and livestock, and improved access to and use of high quality food crop planting materials for men and women.
Achievements 2012-2013	**Improved Agricultural Extension Services:** • **Farmer training:** Training was deliver to facilitators, cooperatives and farmers working across a wide variety of crops including 100 facilitators for maize, 363 trainers and 9,623 farmers working with cassava, 117 trainers and 3,024 farmers working with tamarillo, 46 trainers and 2,342 trainers working with passion fruit, 109 farmer field school (FFS) facilitators and 2,926 farmers working with rice, 169 facilitators and 2,342 farmers were trained in how to control striga and 23,344 farmers worked over an area of 4,338 for striga control, 87, 125 farmers have been involved in banana wilt control training and 4,827 ha of banana plantations have been rehabilitated, 19,640 potato farmers were accessed through farmer field schools, 78 facilitators started training and 194 co-facilitators, 80 facilitators working in livestock are also receiving training and 45 Master Trainers received training in FFS approaches and methodologies. **Agricultural Extension Materials:** • **Extension materials:** Working in collaboration with CICA new extension materials were developed for beans, cassava, maize and

pyrethrum and are in the final stages of printing and distribution. A manual on cattle was developed and a booklet on the Girinka success story. The Hinga Worora magazine was printed and distributed. PiCROPP materials for rice, horticulture, marketing and organizational management are being developed and will be finished next quarter.

- **Audio-visual materials:** CICA coordinated production of three radio programmes with live broadcasts supported by the project. New data has continued to be uploaded to electronic systems but there are challenges with internet and power connections.

- **ICT:** The project supported the upgrading of MINAGRI's website, the hosting and running of AMIS, general data collection and content updating, an active MINAGRI hotline and the initial development of a new extension website for farmers and extensionists.

Support to the Seed Sector (RAB):

- **Training:** Quality Declared Seed multipliers received training in production of potatoe, maize and wheat certified seed. Leaflets with training details for seed multipliers were developed for six different crops. Women were trained to increase their involvement in seed sector activities. All 239 active seed multipliers also received season long field training in seed production.

- **Infrastructure:** Five screen house owners were assisted in business and technical skills development and 54 stores were assessed.

- **Seed gardens:** Banana and cassava seed multiplication gardens, four fruit nurseries and involved FFSs were visited by the project to assess their progress and give advice on how to further develop.

- **Sector professionalisation:** A work committee has been established to develop a National Seed Trade Association, four zonal representatives have been selected and registration of seed dealers is ongoing.

- **Facilitating credit:** 150 seed multipliers were trained in cost analysis, and 45 were provided credit information for key national banks.

- **Quality control:** A general proposal was developed for quality control for potato, wheat and maize seed production, 200 seed multipliers have been certified and ToRs prepared for experts to work in the National Seed Laboratory. Field inspection was conducted to ensure facilities are appropriate and private fields for potato, maize, wheat and beans were inspected, and decisions made regarding their quality. Seed stores and lots were also inspected through laboratory tests and results are pending. New seed multipliers were visited and accepted and received training, along with cooperatives and seed company representatives.

Program Three: Commodity Chain Development and Agribusiness Development

SP 3.2 Promotion and development of traditional export crops

1. Improving Coffee Production, Productivity and Quality

A successful coffee nursery produces high quality seedlings in Macuba Sector, Nyamasheke District

Basic Information	Project cost: 408 million RWF Donor: Government of Rwanda Government contribution: 100% Government funded Implementation starting date: July 2010 Scheduled Completion date: June 2013 Eventual Extension: June 2014 Implementing Agency: NAEB
Mission and Purpose	The objective of this program is to increase coffee production and productivity as well improving coffee quality.
Achievements 2012-2013	Activities for coffee in the fiscal year 2012-2013 concentrated on increasing the area planted with coffee, improvement of coffee productivity through application of fertilizers, control of pests and diseases and supporting coffee cooperatives especially in capacity building and accessing loans from banks. **Increased Coffee Production Area:** • **Planting:** 10,000ha were supposed to be planted and the target was 98% realised, most was planted in quarter 2 (76%) and the rest in quarter 3 and 4. Seedlings are also being prepared for 2013-2014 fiscal year; they are currently under nursery beds. The table shows planting patterns.

Province	Targeted area (ha)	Area planted (ha)	Consolidated area (ha)	% Planted vs. target
East	4597	4,197	1,475	91
West	1524	1791	849.4	117.5
South	2,633	2644	1656	100.4
North	1145	1,141	911	99.6
Kigali City	108	35	12.8	33
Total	**10,007**	**9,808**	**4,904**	**98.1 av.**

Increased Productivity of Coffee Plantations:

- **Fertiliser Application:** 2,323 tons of NPK 22-6-12 were applied by farmers representing 76% of the target that was set. Distribution of fertilizer took place at coffee washing stations. 148 out of a total of 220 participated. Some coffee washing stations did not participate due to fears regarding the cost of transport. Application of mineral fertilizer increased from 1300 tons in the last fiscal year, however it is still below the total needed quantity for all the coffee plantations, at a level of 16%. Application of mineral fertilizer was supplemented by organic fertilizer produced from coffee pulps. In total 9,470 tons was applied and this corresponded to 158% of the national target due to high levels of participation.

- **Pesticide Use:** Pesticides were applied to control pests and diseases. 4,800 liters of imidacloprid insectides, 1,096 litres of fungicide alto and 500 kg of copper oxychloride were applied in coffee plantations for the control of antestia bag, coffee leaf rust and coffee berry disease respectively.

- **Cooperative Training:** More than 30 cooperatives received trainings in good governance, finance, good agricultural practices and in certification through different funded projects in the Coffee Division.

Coffee Production and Export:

- **Production:** For the fiscal year 2012-2013 overall production was 21,221T of green coffee, 88% of the target. Out of the total production 19,567 tonnes were exported generating revenues equivalent to 67,946,527USD. Though coffee production was below target, it was higher than that achieved in 2011-2012. Fully washed coffee was at 35% of total coffee production, exceeding the target.

Coffee Type	2011-2012 (kg)	2012-2013 (kg)	% change
Fully washed	4,715,921	7,082,547	50.18
Semi washed	9,646,200	11,483,880	19.05
Triage	1,891,499	2,376,766	25.66
Robusta	152,262	256,600	68.53
Total	**16,405,882**	**21,199,793**	29.22 av

- **Export Promotion:** Marketing was a success in promoting quality but characterized by declining coffee prices in the international market and reduced revenues. Rwandan coffee was advertised by attending coffee exhibitions, conferences, international coffee programs and international and regional adverts.

SP 3.3 Development of non-traditional high-value export crops

1. NSC – National Sericulture Centre

Fresh mulberry grown by cooperatives supported by the National Sericulture Centre

Basic Information	Project cost: 551 million RWF Donor: Government of Rwanda Project Government contribution: Internally funded project Implementation starting date: June 2009 Scheduled Completion date: Ongoing Implementing Agency: NAEB
Mission and Purpose	The National Sericulture Centre aims to increase sericulture productivity and to contribute to the diversification of Rwandan exports. Activities include: • Supporting sericulture cooperatives • Supporting research related to sericulture • Strengthening the National Sericulture Centre, which coordinates farmer support activities
Achievements 2012-2013	**Support to Sericulture Industry:** • **Cocoon production**: A cumulative total of close to 12 tons of fresh cocoons have been produced over the past couple of years yielding close to 5 tons of dried cocoons (currently in storage). The absence of silk processing machinery is a major constraint. Some funds have been identified under the IFAD funded PRICE project to solve this problem. • **Infrastructure support to sericulture farmers:** Nearly 40 rearing houses for cooperatives have been built on a cost sharing basis. Support to farmers to construct individual rearing houses is also ongoing. Cocoon production will slowly shift from cooperatives to individual farmers targeting 1,600 farmers over a period of 5 years. More than 100 farmers have now been mobilized and started constructing rearing houses and preparing land for mulberry plantations to feed the silk worms.

- **Improving sericulture extension services:** Extension officers operate in 17 zones countrywide to work alongside sericulture farmers. Each extension officer has target deliverables beginning with rehabilitation of existing mulberry plantations, identifying land for expansion of mulberry acreage and farmer mobilization to embrace sericulture as a profit making enterprise. More extension officers will be needed for upscaling.

- **Capacity building of sericulture cooperatives**: Training has been delivered to farmers in the sector on the principles of cooperative management, financial management and other relevant topics, and was organised by a consulting firm.

- **Implementation of the Sericulture National Strategic Plan**: This plan aims to plant 5,000 ha in the first three years (Phase I) on a promotional basis and supported by government and development partners. The second phase will be taken up by a motivated investor (in the private sector) who will install post harvest cocoon processing machinery and develop another 5,000 ha of mulberry. The initial 5,000 ha of land has been identified and mapped. The farmers have been mobilized to prepare land for planting mulberry and about 800 ha of land will be planted with mulberry during season A next year.

- **Market study**: A consultant was recruited to provide market information aligning silk production (type of products, quality and volumes) to available market opportunities

Improvised mounts for cocoons made from papyrus and used by the Isonga Mumajyambere Cooperative in Gatsibo district

Silk yarn freshly woven and ready for demonstration at the National Sericulture Centre during the MINAGRI Agri-show

2. Horticulture Commodity Chain - Intensification and Quality Management

Fresh tomatoes grown and supported under the project to develop horticultural value chains

Basic Information	Project cost: 500 million RwF Donor: Government of Rwanda Government contribution: Internally funded project Implementation starting date: July 2010 Scheduled Completion date: June 2013 Eventual Extension: June 2014 Implementing Agency: NAEB
Mission and Purpose	This project aims to support and develop the horticulture value chain and new agricultural export chains through three major activities: 1. Increasing the capacity of farmers in practicing market-oriented production of horticultural commodities 2. Propagating healthy planting material for selected fruit trees 3. Developing logistical and post harvest infrastructure to reduce post harvest losses faced by farmers.
Achievements 2012-2013	**Increased Vegetable Production:** • NEAB distributed 2804 kg of vegetable seeds to be planted on 1,560 ha of consolidated marshland. Almost 90 per cent of seeds used in the production of vegetables during this fiscal year were purchased by farmers. The area under vegetable production reached 9,773 Ha, an increase from 4,956 Ha last Fiscal year. The main driver of the increase was mobilization activities by District value chain officers. However, it is still a challenge to link production to the market particularly in remote areas. The table below illustrates vegetable production figures.

Crop	Area planted (ha)	Realized production (MT)
French beans	350	1750
Eggplants	1340	20080
Carrots	2470	29400
Hot pepper	1218	2236
Tomatoes	469	4690
Onions	1715	34290
Cabbage	2211	66330
TOTAL	**9,773**	**158,776**

Expanding Fruit Production:

- A large volume of seedlings were distributed included 50,686 mango, 118,270 avocado, 33,461 citrus and 5,495 macadamia. The areas under fruit production expanded to cover 6,070 Ha including 1,080 Ha for passion fruits, 1,172 Ha for tamarillo, 272 Ha for pineapples and 3,546 Ha for perennial fruits. Clean planting materials of different species were distributed to farmers by different partners including MINAGRI and NGOs. Generally, fruit production faced challenges in the last fiscal year including unfinished tenders for seedling distribution and diseases affecting passion fruits and tamarillo. This has been mitigated by introducing clean planting material, good agriculture practices and Integrated Pest Management.

Fruit and Vegetable Production Volumes:

- **Fruit production** increased from 98,951 tons in 2012 season A up to 123,787 tons in 2013 season A, recording an average growFruith rate of 15 % year-on-year. As the fruit sector is still in its infant stage in Rwanda, its output in terms of fruit production volume is not yet increasing significantly. This sector is still dominated by households with small plots. Fruit production growth can be attributed to better production practices, improved transport systems and processing and storage technology improvements.

- **Vegetable production** has also experienced significant growth, particularly in the last year. The total production amounted around 197,149 tons for Season A 2013. Vegetable production is largely driven by expanding domestic demand, derived from the growing commercial opportunities among local consumers in Rwanda, export markets and emerging markets especially the cross-border and regional exports markets.

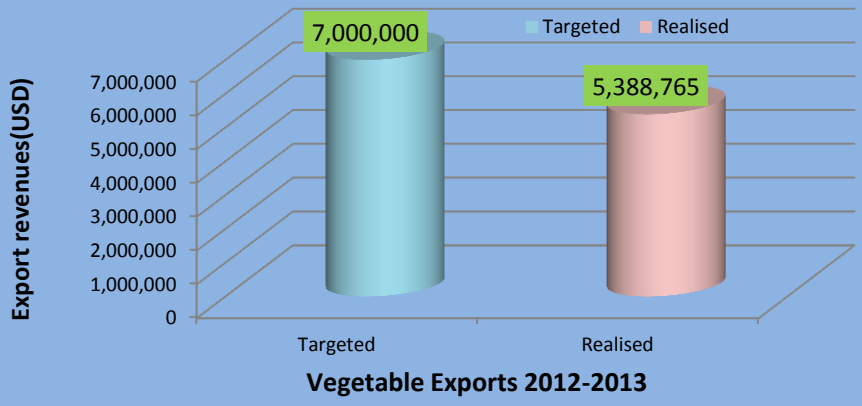
Fruit and Vegetable Exports:

- During the last fiscal year, the value of Rwandan fruit and vegetable exports has reduced compared to 2011-2012, with the largest gains in exports of fresh fruits and processed products. The main export items of fruits and vegetables sectors include:

  1. ***Fruit***: passion fruit, lemons, pineapples, mangoes, mandarins, avocadoes, sweet bananas, watermelon and mixed fruits
  2. ***Vegetables***: onion, beans, tomatoes, eggplants, cabbages, green pepper, hot pepper, carrots, ginger, okra, garlic, peas, beet root, and mixed vegetables

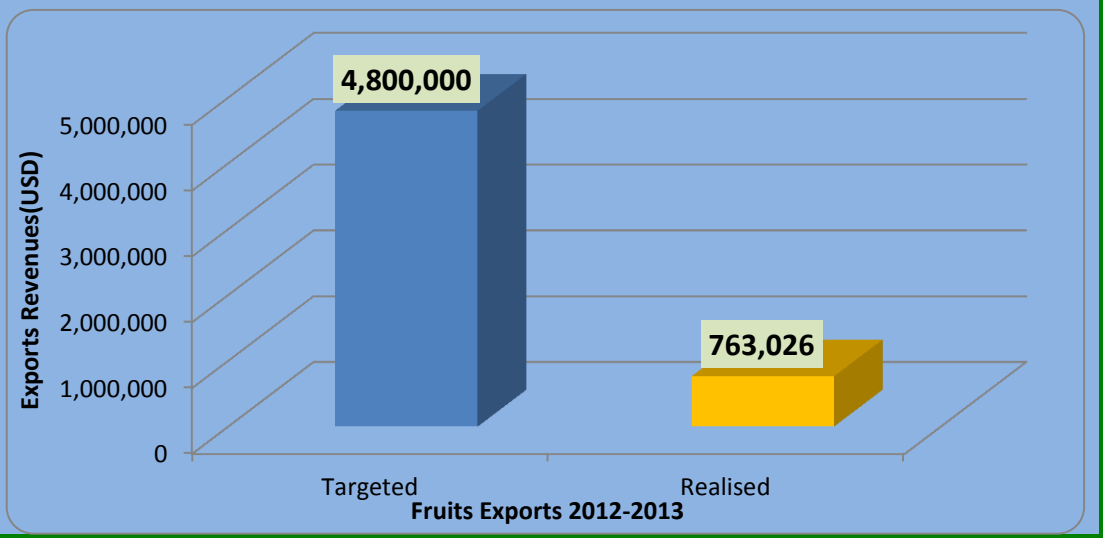
- **Vegetable exports:** The bulk of production was sold on the domestic market and only a small portion exported. This year, the quantity reduced slightly due to the insecurity in the Congo (DRC), a key destination for export products. Vegetable exports fluctuated during the year with the

lowest volumes in the first semester, with gradual increase in the second semester. Export values were USD 5,388,765 for the fiscal year. For fresh vegetables, export gains were greatest for beans, at USD 2,650,406, mixed vegetables with USD 1,852,328 and fresh peas at USD 216,092. Informal and cross border trade accounted for 51% of revenue.



Vegetable Exports 2012-2013

- **Fruit exports:** Fruit exports decreased compared to 2011-2012, with the largest gains in exports of fresh fruits and processed products. The figure below shows the trends in fruit exports measured in terms of quantity exported compared to 2011-2012. As the bulk of production is mainly exported through cross border trade (89%), with the events in the DRC exports reduced. For fresh fruits, export gains were greatest for pineapples, sweet bananas, avocadoes, passion fruits and mixed fruit. Furthermore, export of passion fruits and Tamarillos to Uganda and the East African market has increased. Total exports revenues were USD 763,026. Export returns are very low due to the influence of different factors: formal and regional exports are still very low. There is a need to mobilise exporters for key markets including the Middle East, Brazzaville and the European market. Working on developing orchards of fruits and reducing disease pressure in passion fruit and tamarillo will also support increased exports.



Fruits Exports 2012-2013

SP3.5 Market-oriented rural infrastructure

1. Flower Park Construction

Initial construction of greenhouses has started at Gishali Flower Park

Basic Information	Project cost: 299 million RwF Donor: Government of Rwanda Government contribution: 100% Government funded Implementation starting date: July 2009 Scheduled Completion date: June 2013 Eventual Extension: June 2014 Implementing Agency: NAEB
Mission and Purpose	The objective of this project is to create competitive advantages in Rwandan floriculture by providing incentives to local and international investors such as provision of suitable land and facilities to stimulate investment in floriculture and make Rwanda a player in the global market.
Achievements 2012-2013	**Preliminary Appraisal for Rose Production Sites:** • **Key findings:** various site that have been identified by NAEB suitable for big head rose production in high altitude areas between 1600-2200m, over 650 ha. These areas are strategically placed with water availability, power, labor, fertile soils and within 100km radius to Kigali international air port. Each site also has challenges. The following sites were identified as suitable for rose production and will now be aligned to a clear investment strategy. Detailed feasibility study for these areas are now required as the information for interested investors or development partners. The government should have developing at least one site annually.

Location	Site Visited	Description
Eastern Province (Rwamagana)	**Gishali flower park >100ha**	Located 60kms from Kigali, 10km marrow road from the main highway at 1500m adjacent to Lake Muhazi. The project has started with development of 35 ha of roses and is expected to be in production in 2014.
Southern Province (Muhanga)	**Rungeramigo >80 ha**	50 Kms from Kigali on the main highway to Bujumbura and only 1km from Muhanga town district head quarter at altitude of 1753-1800m with fertile soils plenty of water from Muhanga dam currently under rice production.
Northern Province (Musanze)	**Muko (>100 ha)**	4km from Musanze and River Mukungwa passes through the site, 1653m altitude, fertile soils favorable climate for medium head flowers.

Northern province (Musanze)	**Mutobo I&II (>100 ha)**	15 Km from Musanze River, Mutobo passes through available infrastructure, 2108m altitude, fertile soils, favorable climate for big head flowers.
Western province (Rubavu)	**Kanzenze (>100 ha)**	30 km from Gisenyi, river Muzingo passes nearby, power available, good soils, 2209 m altitude and a favorable climate for big head roses.

Gishali Flower Park:

- **Construction:** In 2012-2013, NAEB started construction works for Gishali flower Park. The development of flower park infrastructure required land leveling, infrastructure, greenhouses, irrigation and spray systems and post harvest facilities such as packhouses. With the land, electricity and water ready, investors will only have to build infrastructure (e.g. greenhouses) and start production. Tendering has been completed and ongoing activities include:
    - Land leveling and construction of packhouse, store and workshop is in progress
    - East African Growers were contracted to erect 2ha of greenhouse materials on the site and construction works are now nearing completion
    - Electricity installation is ongoing working with EWSA
    - The final Environmental Impact Assessment is due.

Summer Flower Production:

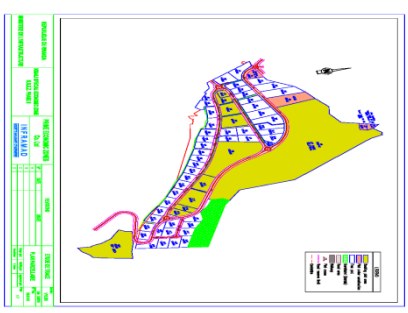
- **Increasing production and exports:** The domestic market for summer flowers is well developed, but not for exports. NAEB is working to increase exports. Sites have been identified with suitable agro-ecological conditions, and the flowers selected. 60% will be alum (lilies) and 30% tuberoses. Samples were sent to buyers with good results and a private company sent the first shipment of 9,520 stems to auction at Holland selling at between EUR 0.08-0.45, which are good prices. NAEB has now partnered with IQ flowers with a major purchase order of 290,000 stems. The table shows potential flower market providers for summer flower orders to drive growth in the sector. Challenges remain in developing Rwanda's floriculture, but progress is promising.

Markets Providers	Location	Remarks
Zeedgee flowers	Kenya	Logistic problems of connecting to Holland
Flora Holland	Holland	Registration to have an auction number
Carms flowers	Holland	Waiting for rose production at Gishali flower park
Green Chain	UK	Recommended by WVB consult, on the waiting list
IQ flowers	Holland	Want the exporter to send more flowers
Nature growth	Burundi	Advised to come and view live flowers in Rwanda
Selecta flora	Kenya	Want Astromelia and Agapanthus

2. Kigali Wholesale Market for Fresh Produce

Kigali wholesale market will eventually provide a selling and collection point for horticultural commodities such as the onions seen here and exhibited at the 2013 Agri-show

Basic Information	Project cost: 100 million USD Donor: Government of Rwanda Government contribution: 100% Government funded Implementation starting date: July 2010 Scheduled Completion date: June 2014 Eventual Extension: Not yet decided Implementing Agency: NAEB
Mission and Purpose	The overall goal of the Kigali Wholesale Market for Fresh Produce project is to construct a well-managed and fully equipped modern fresh produce market to support the horticultural commodity chains serving both local and international markets. The facility is expected to provide farmers, traders and consumers with an orderly trading environment with access to all industry participants in one location. It will also offer packaging and cold facilities to reduce post harvest losses, improve the price structure, and and act as a regional centre for product distribution and marketing.
Achievements 2012-2013	**Preparation for Construction:** • A monitoring and evaluation network composed of MINAGRI/RHODA, Rwanda Development Board (RDB), KCC and the Private Sector Federation (PSF) is in place. Roles and responsibilities of each stakeholder have been defined through MoUs. • A preliminary conceptual architectural design and viability assessment report has been produced but needs to be reviewed. Different feasibility studies have also been completed but procurement for a business plan developer has failed so far. • 10 ha of land was reserved in the Kigali special economic zones and development will start soon.



3. National Strategic Food Reserve

Post harvest infrastructure to improve storage and processing across value chains

Basic Information	Project cost: 2.5 billion RwF Donor: Government of Rwanda Government contribution: Internally funded project Implementation starting date: July 2010 Scheduled Completion date: June 2016 Eventual Extension: Yes Implementing Agency: TF Post Harvest Handling and Storage
Mission and Purpose	The National Strategic Food Reserve aims 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
Achievements 2012-2013	**Management of National Strategic Reserve:** • Over the year, the National Strategic Grain Reserve has been well managed with the principal objective of coping with food emergencies and contributing to a reduction in food insecurity to address potential shocks to food supply. 13,308.57 MT of maize and 3,754.69 MT beans have been stocked. • Through the Purchase for Progress Program (P4P), the Post Harvest Handling and Storage Task Force worked with 23 cooperatives that delivered 3,789.85 MT of grains to the National Strategic Grain Reserves. As a result, there has been increased investment by farmers in crop production and increased capacity to engage in the market. • The National Strategic Grain Reserves were used to support people who faced losses due to climate change through the Food for Work Program. A total of 33.2 MT of maize and 38 MT of beans were distributed.

Program Four: Institutional Development

SP 4.3 Monitoring and evaluation and coordination of the agricultural sector

1. PAPSTA - Support Project to the Strategic Plan for the Transformation of Agriculture

Maize in a project supported drying shed

Basic Information	Project cost: 28 million USD Donors: IFAD, DFID, Belgium Government, WFP, DED Government contribution: 1.3 million USD Implementation starting date: March 2006 Scheduled Completion date: March 2013 Eventual Extension: September 2013
Mission and Purpose	The core objective of PAPSTA is to support the implementation of the Strategic Plan for the Transformation of Agriculture, to increase rural incomes and improve nutrition levels for poor rural populations.
Achievements 2012-2013	**Institutional Strengthening:** • **Strategic support to MINAGRI and agencies:** The project helped review PSTA II and PSTA III. Strategies and investment plans were also developed to support the livestock sector including Poultry, Strengthening the Small animals Industry and Strengthening the Meat Industry. Design studies were completed to support irrigation works including for Rwinkwavu Marshland (1000 ha) in Kayonza District and Kirimbi Marhsland (200 ha) in Nyamasheke District. Technical assistance was provided to update the Mechanisation Strategy with the emphasis on private sector involvement. • **Central level capacity building:** An impact assessment of PAPSTA's capacity building activities was completed and a methodology developed for measuring impact of capacity building more generally. MINAGRI was supported in organizing the first farmers' forum to gain inputs for development of PSTA III. • **Local level capacity building:** Cooperatives received six months training in financial and business management, and a link was set up with the World Food Programme (WFP) for providing training in PHHS. A workshop was held with District and Rwanda Cooperative Association to present the results of the cooperative profiling. • **Marketing support:** Marketing committees were established with key cooperatives and drying and storage facilities constructed.

Crop and Livestock Productivity:

- **Watershed protection:** 18,691 ha out of 25,890 ha of anti–erosion trenches have been maintained in all zones to decrease the erosion impacts and maintain soil structures. 323,726 m2 out of 420,410 m2 of rural roads were rehabilitated. Relating to land husbandry, terraces were constructed in Gakenke District on 32.8 ha and biological measures across 14 ha. 683 ha of progressive terraces were established in other areas. 4,879 m out of 2,842 m of ravines were rehabilitated also.

- **Livestock development:** 309 cows, 246 goats and 46 pigs were distributed to poor and vulnerable households through the Pass On Gift scheme. 1,128 cows were also inseminated on natural heat.

- **Crop intensification:** Planting materials were distributed to farmers including 52,000 pineapple suckers, 1.8 million cassava cuttings, 7,870 banana suckers and 569,259 pennissetum cuttings. Land use consolidation included 7,659 ha for maize, 4,887 ha for climbing beans and 1,292 ha for cassava. Finally, in order to ensure effective management of crop growing marshland areas, four Water Users Organizations were established in Bugesera, Ngororero, Nyamagabe and Gakenke districts and trained in organizational management.

Project Coordination and Management:

- **Review of key achievements:** Since 2006 PAPSTA has delivered interventions across six agro-ecological zones to support capacity building, integrated crop and livestock farming, new farming practices and post harvest handling, all with farmer focused participation and modern and innovative methodologies. PAPSTA documented key achievements of models used by the project and best practice and produced six books to serve as a reference point with the transfer of responsibility to districts.

- **Hand over to districts:** The SPIU facilitated a progressive transfer of responsibility to key district actors to ensure project activities are sustainable. Districts signed summary books of new farming practices and innovative initiatives under the project. Handover ceremonies were held in Nyamagebe, Bugesera, Ngororero and Nyanza. The project will continue to work with districts over the next few months until September 2013 to ensure that work continues and that districts fully understand and have capacity to maintain and strengthen the many achievements of PAPSTA since 2006.

Picture 4: A research demonstrates the high quality Sorghum crop at the National Agricultural Show

Section 4: Financial Year 2012-2013 Budget Analysis

2.1 Overall Budget Execution

Over the 2012-2013 financial year, the government of Rwanda experienced negative shocks to budget planning due to reductions and delays in donor disbursements of budget support funds. The government responded to these shocks through adopting more austere policies and fiscal consolidation to reduce spending. This reduced domestic financing requirements for the budget, and a tight monetary policy helped control inflation. As such, MINAGRI spending was constrained in some areas. Agricultural revenue was able to partly offset this. Production, mainly of food crops, grew by 2%. However, the production of export crops including tea and coffee declined by 9%, due to adverse weather conditions affecting yields. This constrained both sector growth and revenues.

The overall internal budget execution for MINAGRI is given below (table 9):

MINAGRI Budget	Allocation (RwF)	Execution (RwF)	Execution Rate (%)
Total Budget	31 697 444 146	36 488 443 548	114
Development	29 419 098 245	34 233 727 109	116
Recurrent	2 278 345 901	2 254 716 439	99

Table 9: 2012-2013 MINAGRI internal budget execution (MINAGRI)

MINAGRI over-executed its budget for FY2012-2013 due to overspending in the development budget. A considerable proportion of this over-expenditure was priority Crop Intensification, which is of major importance for sector development and domestic food security. The budget over-execution highlights important factors regarding MINAGRI's operations. The further funding provided by MINECOFIN to agriculture after the budget revision allowed MINAGRI to invest further in key project areas. This illustrates the demand for resources to achieve ambitious sector targets, which recognize that agriculture is a pivotal driver of national economic growth and remains the primary source of employment for the majority of Rwanda's population. The execution rate also demonstrates MINAGRI's capacity to disburse and execute the budget on planned activities. The 'total budget' represented here only captures MINAGRI's own budget and internal government financing. This does not therefore capture the total financing in the agriculture sector, which also includes significant external financing contributions to projects, other Ministries' agricultural programmes and off-budget development partner interventions.

Table 10 depicts the quarterly budget execution according to the fours PSTA II programme areas:

1. **Intensification and Development of Sustainable Production Systems**
2. **Support to the Professionalization of Producers**
3. **Commodity Chain Promotion, Horticulture and Agribusiness Development**
4. **Institutional Development**

Prog	Quarterly Execution (RwF)				TOTAL	Budget Allocated (RwF)
	Q1	Q2	Q3	Q4		
1	4,915,022,078	9,211,573,903	8,960,206,004	16,927,647,576	40,014,449,561	35,158,356,371
2	261,918,007	50,240,235	148,399,590	178,957,958	639,515,790	639,515,790
3	663,154,755	2,970,132,833	1,434,259,293	2,273,673,752	7,341,220,633	7,355,338,141
4	448,219,440	519,110,936	525,514,972	277,240,777	1,770,086,125	1,786,259,171

Table 10: 2012-2013 MINAGRI quarterly execution by PSTA II programme (MINECOFIN)

2.2 Agency Level Budget Execution

Table 11 illustrates agency level budgetary implementation. The budgetary execution in terms of total budget, recurrent and development budgets are detailed for RAB, NAEB and MINAGRI Central.

Agency	Budget type	Allocation (RwF)	Execution (RwF)	Execution Rate (%)
RAB	**Total Budget**	**9 417 195 537**	**9 392 263 512**	**99.7**
	Recurrent	4 722 853 166	4 722 853 166	99.5
	Development	4 694 342 371	4 669 410 346	100.0
NAEB	**Total Budget**	**2 024 829 790**	**2 024 715 571**	**100.0**
	Recurrent	716 211 837	677 613 548	94.6
	Development	1 308 617 953	1 156 858 316	88.4
MINAGRI Central	**Total Budget**	**31 697 444 146**	**36 488 443 548**	**114.0**
	Recurrent	2 278 345 901	2 254 716 439	99.0
	Development	29 419 098 245	34 233 727 109	116.0

Table 11: FY 2012-2013 agency budget execution (MINECOFIN)

2.3 National Budget Allocation to Agriculture

The trend of overall Government of Rwanda budget allocation to agriculture is represented by figure 18. The total agriculture budget was 78.3 billion RwF, an increase of 3.8 billion from 2011-2012, which includes MINAGRI's recurrent, domestically and externally financed development budgets, district budgets and RDB's agricultural development budget. This represents the government's continued commitment to rural development more broadly, including rural feeder roads and drives to increase productivity. This occurred despite a constrained budgetary environment, and illustrates government prioritisation of the agricultural sector in a resource constrained environment. It is hoped this rising trend will continue to facilitate the implementation of PSTA III. Agriculture is a vital sector for the economy, as a driver of both growth and poverty reduction. However, resource constraints and decreased availability of donor funding also demonstrates the importance of private sector investment.

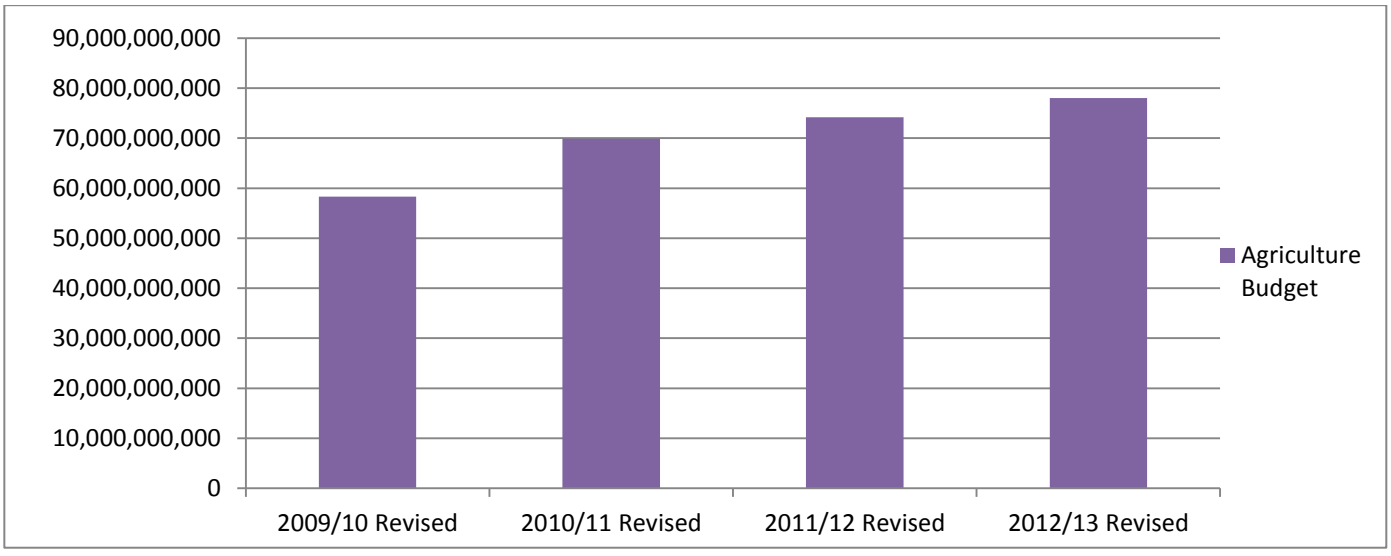


Figure 18: MINAGRI budget time series (MINECOFIN)

When MINAGRI expenditure is compared to national expenditure, there is slight decrease in the proportion of the national budget that MINAGRI received, from 5.5% in FY 2011-2012 to 4.6% in 2012-2013 illustrated by figure 19. It is likely that the budget will remain at a similar level in relation to national expenditure in the coming year. The decrease represents funding constraints due to difficult global economic circumstances and donor aid suspensions. However, despite the decreased share in the national budget given to MINAGRI, as discussed above rural development overall remains a budgetary priority and is funded through other ministries including MINIRENA (Natural Resources), MININFRA (Infrastructure including feeder roads) and MINALOC (Local Government, including decentralization).

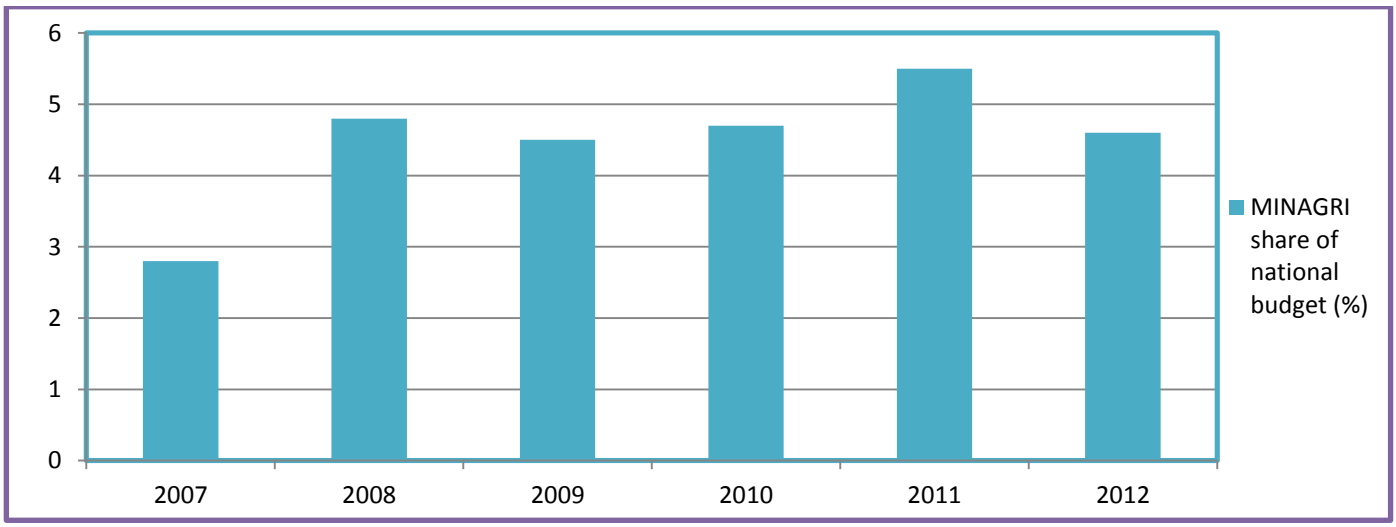


Figure 19: MINAGRI Budget as a percentage of national budget

2.4 Internal and External Projects

Annex V illustrates in detail project level execution of internally and externally funded projects.

2.5 Budgetary Decentralization

Table 12 depicts district budget allocation and execution according to first three PSTA II programs, and relevant sub-programs. Program 4 'Institutional Development' is not included in District level budget expenditure as it is implemented at central MINAGRI level. Allocations to Districts are determined by a weighted formula which allocates 45% according to district population, 45% according the cultivated area and 10% according to district level past performance. Level of poverty is also considered, and those districts with extremely high poverty indices such as Nyaruguru and Ngororero received extra budget in order to develop at a faster rate and reduce the number of households in poverty.

The programs included in district level expenditure include:

1. **Intensification and Development of Sustainable Production Systems**
2. **Support to the Professionalization of Producers**
3. **Commodity Chain Promotion, Horticulture and Agribusiness Development**

Prog.	Sub-program	Allocation (RwF)	Execution (RwF)	Execution Rate (%)
1	TOTAL	**3 277 343 734**	**3 277 343 734**	**100**
	1.1 Sustainable management of natural resources	1 460 150 231	1 460 150 231	100
	1.2 Crop and livestock intensification	1 628 344 158	1 628 344 158	100
	1.4 Irrigation	188 849 345	188 849 345	100
2	TOTAL	**266 023 910**	**266 023 910**	**100**
	2.1 Promotion of farmers' organizations and capacity building for producers	266 023 910	266 023 910	100
3	TOTAL	**392 584 752**	**392 584 752**	**100**
	3.3 Development of high value, non-traditional export crops	361 506 421	361 506 421	100
	3.5 Market oriented rural infrastructure	31 078 331	31 078 331	100
TOTAL		**3 935 952 396**	**3 935 952 396**	**100**

Table 12: District level budget allocation, expenditure and execution by programme

The total district level expenditure was 3.9 billion RwF. The represents a significant increase from the FY 2009-2010 budget allocation of 1.2 billion RwF, and a slight decrease from the revised allocation of 4.1 billion RwF in 2011-2012. Fiscal decentralization is a relatively recent strategic approach in Rwanda, and it is expected that decentralized expenditure in the agricultural sector will further increase as District level absorption capacity grows.

The EU Sector Budget Support for Decentralized Agriculture programme is comprised of a fixed and variable tranche of District level budget support over five years. The fixed tranche consists of 65% of the budget, while the variable tranche makes up the remaining 35%. For FY 2012-2013 the amount realized 6,100,000 million Euros compared to 11 million Euros in FY 2011-2012. With the continued emphasis on decentralization, rural development, growth and employment in the next phase of the poverty reduction strategy (EDPRS II), it is likely that District level budget allocation will grow. This must be accompanied by concerted multi-scalar capacity building initiatives to support budget execution and accountability, and improve knowledge flows and management of information. A detailed note on the implementation of earmarked funds at the district level, and plans to improve decentalised governance process and information management can be found in annex VI.

Picture 5: Women farmers dance to greet MINAGRI staff and project coordinators in the Eastern Province, and to thank the staff for interventions which have transformed their livelihoods and improved their incomes

Section 5: Challenges from FY 2012-2013 and Priorities for FY 2013-2014

Based on the analysis of MINAGRI implementation in FY 2012-2013, below we highlight some **key challenges** faced by the sector in last financial year:

1. Over execution of the budget (at 114% for the total budget) is a concern as it represents the need for further resources to meet the high level priorities of the Ministry. The financing gap for key projects such as irrigation is a challenge in light of the Government of Rwanda Seven Year Plan and Vision 2020 targets, which requires substantial increases in expensive interventions including irrigated land.

2. Donor financing over the last year faced issues with suspensions and cuts. Although this did not directly affect projects, it increases uncertainty in the funding landscape which means that it is harder to plan and determine what is achievable within a given time-span.

3. Leveraging private sector investment remains a challenge. The public sector alone cannot achieve the ambitious targets set, even with development partner support. MINAGRI must continue to focus on attracting private sector investors, creating a market for growth and removing barriers to market efficiency. This is particularly important as it is likely that overall donor support will decline in the medium term.

4. MINAGRI must continue to engage with the ASWG and all sector actors on vital strategic issues, particularly malnutrition. NGOs are an important part of the agricultural forum and collaboration must be increased to facilitate effective and accountable actions in the development process.

5. Capacity gaps persist at all delivery levels and in all processes including planning and implementation. The SCBI has started well and contributed to building capacity in key strategic areas, but capacity building efforts need to be more uniformly adopted and the model expanded. A new Human Resource Development Plan is currently being prepared and due to be finalised by September 2013. After the plan is validated, training and other actions will begin to close capacity and knowledge gaps.

6. Decentralised delivery is a challenge because it is still at an early stage in Rwanda, and local government does not have the necessary systems to efficiently execute budget and programmes at the district, sector and cell level. MINAGRI is working to counter this, with support from the EU, and the decentralisation of responsibilities such as the Girinka programme and animal health will help build local skills and implementation networks.

7. To better implement EDPRS II interventions with implications beyond the agricultural sector, and to leverage integrated private sector investment MINAGRI must improve its coordination with other relevant ministries particularly RDB, MINECOFIN, MININFRA, MINALOC and MINICOM.

8. Knowledge management within the Ministry could be improved to ensure better sharing of plans, results and best practice. M and E systems require extensive labour and travel to ensure figures are

accurate. An online Management Information System (MIS) and shared server would allow information to be shared more easily and better and more timely tracking of data. This is ongoing.

The 2013-2014 financial year is an opportunity to overcome these challenges with the start of implementation of PSTA III. This is also an exciting time for the sector as we move towards a new model of financing and investment, focused on the private sector. Table 13 outlines key priorities.

5.1 Strategic Priorities for 2013-2014

Key challenges/ constraints	Strategic priorities under PSTA III	Roadmap of key interventions and innovations
Low levels of agricultural productivity	- SP 1.1. Soil Conservation and Land Husbandry - SP 1.2. Irrigation and Water Management - SP 1.3. Agricultural Mechanisation - SP 1.4. Inputs to Improve Soil Fertility and Management - SP 1.5. Seed Development - SP 2.2. Extension and Proximity Services for Producers -SP 4.6. Environmental Mainstreaming in Agriculture	• Scaling up and rehabilitating terracing • Scaling up irrigation and improved management through WUOs, and diversifying financing • Utilizing private sources and financial mechanisms for access to mechanization and increased training • Building capacity in key priority areas such as irrigation and mechanization • Improving access to inputs through privatisation of fertiliser distribution and phasing out subsidies • Improved quality seed certification and network • Increasing access to targeted extension and scaling up successful models such as FFS and demos • Environmental Impact Assessments for all new projects and climate change considerations
Low levels of animal resource productivity	-SP 1.6. Livestock Development - SP 3.4. Development of Priority Value Chains: Dairy and Meat - SP 3.5 Development of Priority Value Chains: Fisheries - SP 3.6. Development of Priority Value Chains: Apiculture	• Increased distribution of livestock and scale-up of Girinka and small stock programme • Genetic improvement programme • Improved animal health through better production of feed, education and provision of local para-vets • Construction of livestock infrastructure and support for fisheries and apiculture • Support to MCCs and dairy processors • Education around nutritional benefits of animal products to increase demand and consumption
Need to bulk up production to ensure farmers produce surplus for market and improve market linkages	- CIP land consolidation - SP 2.3. Farmer Cooperatives and Organisations - SP 3.1. Creating an Environment to Attract Private Investment, Encourage Entrepreneurship and Facilitate Market Access - SP 3.8. Market Oriented Infrastructure	• Working with farmers to successfully consolidate land parcels and improve smallholder production • Organising farmers into cooperatives and building skills in entrepreneurship and agri-business • Implementing new models of farming such as contract and satellite farming • Rehabilitation and development of feeder roads • Construction of post-harvest infrastructure to reduce losses and increase marketed produce • Engagement of private sector for funding
Capacity gaps at all levels need to be addressed	- SP 4.1. Institutional Capacity Building - SP 4.2. Decentralisation in Agriculture	• New Human Resource Development Plan will be implemented, supported by SCBI • Capacity will be built at local level and more

	- SP 4.3. Legal and Regulatory Framework - SP 4.4. Agricultural Communication, Statistical Systems, M&E and MIS	programmes decentralised • Legal framework will support delivery • New MIS and improved knowledge management to assist in monitoring agricultural programmes • CICA will lead to improve communications through new website and new shared servers
Lack of private investment and integration of value chains	- SP 3.1. Creating an Environment to Attract Private Investment, Encourage Entrepreneurship and Facilitate Market Access - SP 3.2. Development of Priority Value Chains: Food Crops - SP 3.3. Development of Priority Value Chains: Export Crops - SP 3.7. Agricultural Finance	• Establishing a new Agricultural Delivery Unit to help facilitate investment process • Conduct feasibility study for catalytic fund • Improve entrepreneurship skills and agri-business involvement of smallholder farmers • Integrate staple crop value chains and remove key obstacles to investment • Increase areas planted with tea, improve coffee quality and processing and continue to produce premium products for the international market • Help link farmers to financial products including insurance, savings and loans
Reduced malnutrition and stunting	- SP 1.7. Nutrition and Household Vulnerability	• Roll out kitchen gardens to improve diverse diets • Increase education and extension in nutrition • Scale-up Girinka and One Cup of Milk per Child • Distribute fortified beans, sweet potato, maize
Gender and youth inclusivity	- SP 4.5. Gender and Youth in Agriculture	• Gender sensitive tools and training delivered to Ministry staff, M and E officers and extensionists • Targeting youth in agricultural training
Improved communication with sector actors and other ministries	- Working with cross sector forums and sub-working groups - Facilitating frequent communication across Ministries and stakeholders -Inclusion of Private Sector Federation in groups	• Continued operation and strengthening of the ASWG and SWAP group • Seven sub-working groups for policy actions with ministries, DPs, private sector and NGOs: Irrigation, Soil Conservation, Soil Fertility, Extension, Livestock, Market Infrastructure and Environmental Sustainability • Sub-working groups on nutrition, gender and export promition to achieve shared goals

Table 13: MINAGRI's strategic priorities and key actions for the 2013-2014 financial year

Annex I: EDPRS II and PSTA III Linkages

EDPRS II	PSTA III
Integrated approach to land husbandry	- Soil conservation and land husbandry
Increased productivity and sustainability of agriculture	- Extending/improving irrigation systems, slope stabilization and erosion management schemes - Agricultural mechanisation - Agricultural input use - Improved seed development - Soil fertility management through improved agricultural practices - Promotion of agro forestry to improve productivity, diversify and reduce land degradation
Enable graduation from extreme poverty	- Girinka supports poor families - Other livestock programmes will include distribution of small stock to tackle extreme poverty
Connect rural communities to economic opportunity through infrastructure	- Development and rehabilitation of rural feeder road network to connect farmers to market - Construction of market infrastructure including storage, processing and physical markets
Increase the domestic interconnectivity of the Rwandan economy …	-Value chain development and private sector investment to increase exports and add premium - Entire value chain approach facilitates both demand and supply side of markets for staple and export crops, livestock and fisheries
Transform the private sector by increasing investment in priority sectors	-Development of post harvest facilities to improve post harvest management and agro processing -Value chain development through agri-business and encouraging entrepreneurship in the sector
Increased private and public advisory services to farmers, especially women and youth, for agricultural skills development	- Increased access to and quality of farmer extension services and service centres - Scale up successful knowledge transfer models e.g. FFS and demonstration plots

Table 14: Relationship between EDPRS II and PSTA III

Annex II: Nutrition and Food Security through Kitchen Gardens

MINAGRI, working through the Rwanda Agriculture Board (RAB), had initiated kitchen garden practices in order to fight the problem of malnutrition and insufficient dietary diversity in different districts. It engages local government and key NGOs, projects and other stakeholders to increase awareness around the benefits of kitchen gardens to reduce malnutrition. All RAB interventions are focusing on districts with high level of malnourished children

The CFSVA/NS 2012 survey showed that across Rwanda, the number of households in the lowest Ubudehe categories of 1 and 2 was 57.8%. All RAB interventions are focusing on vulnerable districts with the highest stunting rates, caused by inadequate feeding. In order to guide different interventions for kitchen gardens activities, in 2012, RAB also conducted an assessment on the status of kitchen gardens in all districts. Data was aggregated district by district, including households of Ubudehe category 1 and 2

According to the survey results, RAB found that, in 2012 the national aggregated average of households with kitchen gardens compared to the districts targets is 64%. This is similar to the results of CFSVA/NS 2012 (see table 15 below). The results of the assessment has helped RAB to guide and target interventions according to Districts with the lowest traffic scoring.

The major RAB intervention areas include:

- Development of extension materials on kitchen gardens in collaboration with key players
- Nationwide awareness campaign on kitchen gardens and the nutritional values of exotic and endogenous vegetables through JAPEM (Join action plan to eliminate malnutrition in Rwanda) and the 1000 days campaign to eliminate malnutrition in 2013-2014
- Training of trainers and farmers to mainstream good nutritional practices in rural households
- Monitor, evaluate and improve implementation of national nutrition related activities
- Distribution of vegetable and fortified seeds in vulnerable districts.

Figure 20: A farmer plants a kitchen garden to improve nutritional practices

No	District	Targets = Number of kitchen garden to be constructed	Progress = Number of kitchen garden constructed	Progress = Traffic light scoring (%)	Difference between targets and progress	RAB's contribution (distribute 680 kg of vegetable seeds) during Oct-Dec 2012
1	Bugesera	67,000	47,000	70	20,000	
2	Gatsibo	84,398	62,613	74	21,785	
3	Kayonza	67,606	62,198	92	5,408	
4	Kirehe	55,405	47,941	87	7,464	
5	Ngoma	64,253	41,941	65	22,312	
6	Nyagatare	18,750	15,452	82	3,298	
7	Rwamagana	49,645	29,400	59	20,245	5,789
8	Gasabo	31,313	18,500	59	12,813	
9	Kicukiro	9,747	4,100	42	5,647	4,211
10	Nyarugenge	1,000	450	45	550	
11	Burera	70,203	67,856	97	2,347	
12	Gakenke	67,857	66,857	99	1,000	
13	Gicumbi	64,800	57,720	89	7,080	
14	Musanze	80,555	54,549	68	26,006	
15	Rulindo	62,878	39,819	62	23,059	5,263
16	Karongi	61,059	19,000	31	42,059	3,684
17	Ngororero	73,964	64,348	87	9,616	5,000
18	Nyabihu	56,570	12,550	22	44,020	
19	Nyamasheke	76,894	67,948	88	8,946	3,000
20	Rubabu	75,015	56,911	76	18,104	
21	Rusizi	69,964	45,476	65	24,488	
22	Rutsiro	68,915	19,730	29	49,185	2,000
23	Gisagara	72,994	37,227	51	35,767	
24	Huye	71,690	46,662	65	25,028	
25	Kamonyi	69,866	38,790	56	31,076	
26	Muhanga	67,482	34,424	51	33,058	
27	Nyamagabe	72,654	51,882	71	20,772	
28	Nyanza	43,480	32,403	75	11,077	
29	Nyaruguru	61,008	13,307	22	47,701	6,842
30	Ruhango	65,313	42,082	64	23,231	
	Total	1,802,278	1,199,136		603,142	**35,789**
			Traffic light scoring (%)	**64.8**		

Table 15: Quick assessment of the status of kitchen gardens in 2012 (RAB)

Annex III: The New Methodology and Baseline for Soil Erosion Control

In 2012 RAB developed a new methodology to survey and calculate soil erosion control coverage across Rwanda. This allows better identification of existing conservation infrastructure, the need for rehabilitation, and the gaps in erosion control. For the first part of the new methodology, the total district areas were determined using the statistics functions of GIS tools (ILWIS software =Integrated Land Water Information System) and administrative maps of Rwanda. The cropped areas were developed using image classifications to exclude lakes, forest, grassland, marshlands, lowlands, build up areas and pastures. In order to identify erosion trends, slopes were categorised according to the following: 3-25% for progressive terraces suitability, 25-55% for bench terraces suitability where the soil depth is greater than 1.5 m and > 55% for forest and pasture suitability. The slope range 25-55% where soil types were shallow was also assigned to the category of progressive terraces. The slope class bracket that suits this method of erosion control assessment is from 3% to 55%. The orthophotos (of 0.25 m spatial resolution) were for recognition and measurement of the areas covered by the assessment, the GPS and topographic maps for the guidance of field workers to sites.

Field data collection aimed to estimate soil conservation structures coverage already in place and conduct measurements according to the procedures recommended by this methodology, focused on types of coverage structures of erosion control on the hillside. The orthophotos processing was used for the data collection exercise using ARC GIS. After data collection Excel and SPSS were used for data entry. On completion of the assessment, MINAGRI and RAB used the new baseline data to set the following revised targets for erosion control over the next five years of PSTA III (table 16).

	Baseline (2012/2013)	2013/2014	2014/2015	2015/2016	2016/2017	2017/2018
Percentage Increase (%)		2.25	2.25	3	3.75	3.75
Erosion Control Status	73	80.2	87.4	89.2	90.2	91

Table 16: Soil erosion control from 2012-2018 (RAB)

The new baseline methodology and overall assessment also provided a comprehensive overview of protection according to each district, suitability for terracing and to then set targets. Table 17 and 18 below illustrate the district targets for progressive and radical/bench terraces. There remains a large area of hectares of land to be developed with radical terraces, through a comprehensive land husbandry package including use of liming, compost, hillside irrigation, manure and improved seeds. MINAGRI and RAB will work in collaboration with development partner projects including LWH, RSSP and KWAMP to ensure targets are realised in a sustainable manner.

District	Remaining area (ha) - progressive terraces	2013-2014 (15% of targets)	2014-2015 (15% of targets)	2015-2016 (20% of targets)	2016-2017 (25% of targets)	2017-2018 (25% of targets)	Total Target (to reach 95% by 2017-2018)
KIREHE	11,780	1,669	1,669	2,226	2,782	2,782	11,130
NGOMA	14,339	2,003	2,003	2,670	3,338	3,338	13,351
RWAMAGANA	12,335	1,743	1,743	2,324	2,905	2,905	11,618
KAYONZA	55,419	7,892	7,892	10,522	13,153	13,153	52,610
GATSIBO	29,687	4,215	4,215	5,620	7,024	7,024	28,098
NYAGATARE	42,974	6,122	6,122	8,163	10,204	10,204	40,815
BUGESERA	18,417	2,475	2,475	3,300	4,125	4,125	16,499
BURERA	1,442	193	193	257	321	321	1,284
GAKENKE	1,347	61	61	82	102	102	408
GICUMBI	12,199	1,620	1,620	2,161	2,701	2,701	10,803
RULINDO	1,400	47	47	63	79	79	315
MUSANZE	2,038	260	260	346	433	433	1,732
KARONGI	5,516	786	786	1,048	1,310	1,310	5,240
RUSIZI	1,454	173	173	231	288	288	1,153
NYABIHU	2,455	347	347	463	578	578	2,314
RUBAVU	10,391	1,468	1,468	1,957	2,446	2,446	9,784
NGORORERO	7,626	1,071	1,071	1,428	1,785	1,785	7,141
NYAMASHEKE	5,400	760	760	1,014	1,267	1,267	5,068
RUTSIRO	18,763	2,671	2,671	3,561	4,451	4,451	17,806
HUYE	6,524	919	919	1,226	1,532	1,532	6,129
GISAGARA	8,028	1,057	1,057	1,410	1,762	1,762	7,049
NYANZA	12,198	1,724	1,724	2,298	2,873	2,873	11,491
RUHANGO	8,276	1,176	1,176	1,568	1,960	1,960	7,838
KAMONYI	7,299	1,037	1,037	1,382	1,728	1,728	6,911
NYARUGURU	2,813	401	401	534	668	668	2,672
NYAMAGABE	5,559	773	773	1,031	1,289	1,289	5,155
MUHANGA	9,678	1,374	1,374	1,832	2,290	2,290	9,159
KICUKIRO	787	99	99	133	166	166	663
NYARUGENGE	1,700	238	238	317	396	396	1,585
GASABO	4,190	580	580	773	967	967	3,867
TOTAL	**322,036**	**44,953**	**44,953**	**59,938**	**74,922**	**74,922**	**299,688**

Table 17: District targets for progressive terraces, with data based on 2012 Soil erosion control baseline (RAB)

District	Remaining area (ha) for bench terraces	2013-2014 (15% of targets)	2014-2015 (15% of targets)	2015 - 2016 (20% of targets)	2016-2017 (25% of targets)	2017-2018 (25% of targets)	Total Target (to reach 60% in 2017-2018)
KIREHE	4,932	444	444	592	740	740	2,959
NGOMA	4,162	371	371	495	618	618	2,473
RWAMAGANA	2,949	198	198	264	330	330	1,320
KAYONZA	7,301	613	613	817	1,021	1,021	4,084
GATSIBO	6,634	576	576	768	960	960	3,841
NYAGATARE	4,233	381	381	508	635	635	2,540
BUGESERA	2,111	190	190	253	317	317	1,266
BURERA	6,172	544	544	725	906	906	3,624
GAKENKE	17,461	1,553	1,553	2,071	2,589	2,589	10,354
GICUMBI	5,704	497	497	662	828	828	3,310
RULINDO	6,854	608	608	811	1,014	1,014	4,056
MUSANZE	2,999	270	270	360	450	450	1,800
KARONGI	16,860	1,507	1,507	2,009	2,512	2,512	10,047
RUSIZI	4,173	374	374	498	623	623	2,491
NYABIHU	9,567	846	846	1,129	1,411	1,411	5,643
RUBAVU	3,806	322	322	429	537	537	2,147
NGORORERO	17,209	1,523	1,523	2,030	2,538	2,538	10,150
NYAMASHEKE	8,326	727	727	970	1,212	1,212	4,848
RUTSIRO	12,439	1,114	1,114	1,486	1,857	1,857	7,428
HUYE	5,119	461	461	614	768	768	3,071
GISAGARA	6,497	573	573	763	954	954	3,817
NYANZA	2,623	219	219	292	365	365	1,459
RUHANGO	3,912	352	352	469	587	587	2,347
KAMONYI	2,307	200	200	267	334	334	1,335
NYARUGURU	3,873	331	331	442	552	552	2,209
NYAMAGABE	14,672	1,315	1,315	1,753	2,192	2,192	8,767
MUHANGA	12,729	1,141	1,141	1,521	1,902	1,902	7,607
KICUKIRO	654	59	59	78	98	98	392
NYARUGENGE	538	48	48	65	81	81	323
GASABO	2,098	189	189	252	315	315	1,259
TOTAL	**198,917**	**17,546**	**17,546**	**23,394**	**29,243**	**29,243**	**116,970**

Table 18: District targets for bench/radical terraces, with data based on 2012 Soil erosion control baseline (RAB)

Annex IV: Production of Staple Crops for Food Security

Production of staple crops is essential to maintain domestic food security. As such, a composite index on staple food crop production, including cereals, roots and tubers and beans, is allocated as a CPAF indicator. The indicator considers the 'production of key food security crops according to the cereal equivalent of 1,000 metric tons. The target for this financial year was 3,235. MINAGRI far exceeded that target to produce 3,790 metric tons cereal equivalent of staple food crops. To generat this figure, the Season A and Season B data for different staple food crops was assessed to generate a total production in kiglograms. This was then multiplied by a cereal equivalent indicator according to different crops. For example, maize has an indicator of 1.00, while cassava is equivalent to 0.32 kilograms of cereals. The total was generated by the sum of all cereal equivalents results for the different crops, and the result was converted from kilograms into tons to generate the final figure of 3,790. Table 19 below gives details for each crop. The figures and overall cereal equivalent index is supported by data from the Crop Assessment Survey for Season A and Season B for the 2012-2013 financial year.

	Production				Calorie Supply (Kcal)	
Crops	**Season A**	**Season B**	**Total (MT)**	**Total (Kg)**	**Cereal Equivalent Index (CE)**	**Total/1000 x Cereal Equivalent**
Maize	505,887	161,947	667,834	667,834,000	1.00	667,834
Wheat	14,392	55,744	70,136	70,136,000	1.00	70,136
Rice	41,787	51,959	93,746	93,746,000	1.00	93,746
Beans	253,952	184,285	438,237	438,237,000	1.00	436,963
Banana	1,654,150	1,637,703	3,291,853	3,291,853,000	0.19	641,146
I. Potato	1,432,045	808,670	2,240,715	2,240,715,000	0.21	475,501
Cassava	1,306,014	1,642,106	2,948,120	2,948,120,000	0.32	934,143
Sorghum	12,835	144,658	157,493	157,493,000	1.00	157,493
S. Potato	500,049	581,174	1,081,223	1,081,223,000	0.28	302,742
Total	**5,721,111**	**5,268,246**	**10,989,357**	**10,989,357,000**	-	**3,779,703.52**

Table 19: Calculation of staple crop production in cereal equivalent in FY 2012-2013 (MINAGRI)

Annex V: Externally and Internally Financed Projects Budget Execution

	ON BUDGET EXTERNALLY FINANCED PROJECTS								
AGENCY	**PROJECT NAME**	**DONOR**	**START DATE**	**END DATE**	**TIME EXECUTION RATE (%)**	**TOTAL BUDGET**	**TOTAL EXPENDITURE**	**FINANCIAL EXECUTION RATE (%)**	**COMMENTS**
MINAGRI	Rwanda Land, husbandry water harvesting and hillside irrigation (LWH)	GAFSP, IDA	6/2/2010	12/30/2015	57	61,139,370,400	25,733,286,018	42	
	Second Rural Sector Support (RSSPIII)	WB	6/20/2012	10/30/2017	19	51,000,000,000	9,225,119,387	18	
	Second Rural Sector Support (RSSPII)	WB	20-Jul-08	28-Feb-13	82	22,346,775,320	21,954,475,103	98	Finished budget and closed before the estimated time
	Agriculture Development Support project to Bugesera (PADAB)	AfDB	Mar-07	Dec-13	95	9,896,620,000	9,996,995,785	101	Changes in exchange rate is the main reason for exceeding the planned budget
	Multinational project (Rwanda & Burundi)/Bugesera Natural Region Rural Infrastructure Support Project (PAIRB)	ADB	1-Apr-10	31-Dec-15	57	11,249,980,000	2,750,849,136	24	Delayed to start direct project activity implementation
	Integrated Management of Interior Lakes Project (PAIGELAC)	ADB	10-May-05	31-Dec-12	99	13,124,760,000	12,353,997,531	94	Finished budget and closed
	Livestock Infrastructure Support Program(LISP)	AfDB	Jun-11	Dec-15	61%	33,664,645,877	-		No project report shared
	Kirehe Community-Based Watershed Management Project (KWAMP)	IFAD	4/30/2009	6/30/2016	55	27,623,120,000	21,302,589,034	77	

	Support Project for the Strategic Transformation of Agriculture (PAPSTA)	IFAD, BTC, DFID	3/31/2006	Mar-13	100	18,463,760,000	18,582,409,000	101	Finished and closed, but note differences in budget allocation vs budget execution
	Project for Rural Income Through Exports (PRICE)	IFAD	2012	2018	21	33,657,000,000	3,211,741,000	10	
	Market Oriented Advisory Services and Quality Seeds (SPAT2)	BTC	2012	2014	25	15,268,400,000	1,918,072,993	13	
	Support to small stock development program (Appui au petit elevage)-APPEL	BTC	7/1/2009	Dec-13	100	4,000,000,000	3,432,440,610	86	
TOTAL						**301,434,431,597**	**130,461,975,597**	**43.3**	
	ON BUDGET INTERNALLY FINANCED PROJECTS								
MINAGRI	Priority Crop Intensification (CIP)	GoR	Jul-12	Jun-13	100%	11,500,000,000	9,727,071,136	84	
	National Strategic Food Reserve	GoR	Jul-12	Jun-13	100%	3,300,000,000	1,200,000,000	36	
	Immediate Action Irrigation - Government Funded Irrigation (GFI)	GoR	Jul-12	Jun-13	100%	9,946,169,381	5,933,687,181	60	
	Gishwati Land and Water Management (GLWM)	GoR	Jul-12	Jun-13	100%	572,928,864	573,000,000	100	
	Agricultural Mechanization	GoR	Jul-12	Jun-13	100%	1,500,000,000	700,117,970	47	
	National Sericulture Center	GoR	Jul-12	Jun-13	100%	150,000,000	93,750,000	63	
TOTAL						**26,969,098,245**	**18,227,626,287**	**67.6**	
RAB	One Cow per Poor Family	GoR	Jul-12	Jun-13	100%	2,512,853,166	1,104,959,285	43.97	
	Genetic Improvement	GoR	Jul-12	Jun-13	100%	770,000,000	350,000,000	45.45	
	One Cup of Milk per Child	GoR	Jul-12	Jun-13	100%	1,000,000,000	400,000,000	40.00	
	Banana Development and Bacterial Wilt Control	GoR	Jul-12	Jun-13	100%	220,000,000	89,790,939	40.81	

	Poultry Industry Development	GoR	Jul-12	Jun-13	100%	220,000,000	30,000,000	13.64	
TOTAL						**4,722,853,166**	**1,974,750,224**	41.81	
NAEB	Flower Park Development	GoR	Jul-12	Jun-13	100%	299,728,825	299,728,826	100.00	
	Improving Coffee Production, Productivity and Quality	GoR	Jul-12	Jun-13	100%	408,889,128	371,845,480	90.94	
	Commodity Chain Program: Horticulture Intensification and Quality Development	GoR	Jul-12	Jun-13	100%	500,000,000	385,284,010	77.06	
	Kigali Whole Sale Market	GoR	Jul-12	Jun-13	100%	100,000,000	100,000,000	100.00	
TOTAL						**1,308,617,953**	**1,156,858,316**	**88.40**	

Table 20: Externally and internally financed project budget exection in the FY 2012-2013 (MINECOFIN)

Annex VI: Earmarked Transfers and Decentralised Governance

Decentralisation allows for better implementation, monitoring and evaluation of different government interventions at the local level. Although the approach is relatively new in Rwanda, decentralised institutions are increasingly responsible for key programmes to reduce poverty and increase domestic food security. In agriculture, under the PSTA III, the following programmes are subject to earmarked transfers and implementation at district level (table 21):

S/N	Programme and Sub Programme	Objectives
1	**Agriculture and animal resource intensification**	This program is aimed at releasing the physical constraints to the sector's development in the areas of erosion control, water and soil management, input use, food security and nutrition. It also incorporates the training activities that need to accompany the provision of physical infrastructures and inputs
1.1	Soil conservation and land husbandry	To decrease sharply the rate of soil erosion and to increase the water retention capacity of watersheds.
1.2	Irrigation and water management	To increase the total area of land under irrigation which will facilitate double cropping, reduce weather risks to yields and improve productivity. For the earmarked transfers for irrigation development, the objective of the subprogram is to provide hillside irrigation infrastructures for small scale irrigation.
1.6	Livestock development	To increase the number of household with livestock, improve genetic performance of livestock, improve disease control, veterinary services and improve animal nutrition.
2	**Research and technology transfer, advisory services and farmer professionalization**	To make the sector more knowledge-intensive through professionalization and capacity building for producer organizations and through improvements in the systems for technology generation and dissemination
2.3	Farmer cooperatives and organizations	To empower farmers by giving them greater ability to develop solutions on their own initiatives and to access the technical assistance they need on particular issues.
3	**Value chain development and private sector investment**	To create, through institutional reforms, investments and incentives, an environment which is favorable for farmers and agro-entrepreneurs to develop high-value export products , includingprocessed products and to access the markets which will justify the investments in those areas
3.3	Development of priority value chains: Export crops	To increase the production and promote the quality of nontraditional export crops so that farmers can receive higher returns on their harvests;
3.8	Market oriented rural infrastructures	To ensure the provision of the necessary infrastructure for post-harvest handling and processing for agricultural products, and connection from field to market.

Table 21: PSTA III Programmes subject to earmarked transfers (MINAGRI)

For all the programs, the allocation of earmarked funds is decided according to a formula based on population of district (45% weighting), cultivated area of (45% weighting) and district performance (10% weighting). Within each program or sub-program, allocation is according to the importance of each activity. The formula is not applied for rural feeder roads, where allocation is according to the cost per kilometer.

To facilitate improved governance at the local level and strengthen the process of decentralization, guidelines are available at the district level for different interventions. These show the objective of each programmes and sub-programmes (e.g. table 21), the target set, indicators, activities, the weighting of each programme, the allocation formula, disbursement conditions and modalities. A copy of these guidelines can be obtained from MINAGRI.

To ensure effective implementation, managing information across the different levels of government, and ensuring accurate monitoring and evaluation (M&E) is essential. The M&E framework for PSTA III, including district level targets, has already been identified, However, the framework is undergoing revision to prioritise key indicators and identify lines of action and stakeholders. Currently, districts already submit monthly, quarterly and annual financial reports to MINECOFIN and quarterly and annual activity reports to MINAGRI.

In order to improve data management, there are also plan to build and implement and online MIS tool used at central and local levels. There are some existing web-based information sharing systems like CountryStat-Rwanda, MINAGRI-AMIS and Esoko (for food prices). The Prime Minister's Office has also developed a common government web-based reporting system which is helping MINAGRI to improve data management for information related to the yearly performance contracts (MIHIGO) in each quarter. MINAGRI is also in the process of ongoing discussions with Rwanda's Local Development Agency (LODA) on how MINAGRI can more easily access data from districts.

Once the M&E framework for PSTA III is revised, finalized and validated, a web-based monitoring system will be developed to facilitate easy access to all data users and decision-makers. The African Development Bank is willing to support MINAGRI to establish an e-Government Data Portal to provide a platform that will integrate information collected and provide easy access to data and documentation. This is priority task for the coming financial year, 2013-2014.

Picture 6: Restored and protected agricultural lands in Gishwati, where the GWLM project has sustainably developed the landscape through land husbandry and forestation



Ministry of Agriculture and Animal Resources

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