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RWANDA

FY 2011–2015 Multi-Year Strategy

U.S. Government Document

The Feed the Future (FTF) Multi-Year Strategies outline the five-year strategic planning for the U.S. Government's global hunger and food security initiative. These documents represent coordinated, whole-of-government approaches to address food security that align in support of partner country priorities. The strategies reflect analysis and strategic choices made at the time of writing and while interagency teams have formally approved these documents, they may be modified as appropriate.

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ABBREVIATIONS AND ACRONYMS

AFR	Access to Finance Rwanda
AGRA	Alliance for a Green Revolution in Africa
ASIP	Agriculture Sector Investment Plan
AU	African Union
BCC	Behavior Change Communication
CAADP	Comprehensive Africa Agricultural Development Program
CBJ	Congressional Budget Justification
CBNP	Community-Based Nutrition Programs
CDC	Centers for Disease Control
CIDA	Canadian International Development Agency
CIP	Crop Intensification Program
CPAF	Common Performance Assessment Framework
DCA	Development Credit Authority
DFID	Department for International Development (UK)
DHS	Demographic and Health Survey
DLI	Development Leadership Initiative
DRC	Democratic Republic of Congo
EAC	East African Community
EC	European Commission
EDPRS	Economic Development and Poverty Reduction Strategy
Ex-Im	Export-Import Bank
FAO	Food and Agriculture Organization
FARA	Fixed Amount Reimbursement Agreement
FEWS	Famine Early Warning System
FSN	Foreign Service National
FTF	Feed the Future
GAFSP	Global Agriculture and Food Security Program
GDA	Global Development Alliance
GHI	Global Health Initiative
GOR	Government of Rwanda
ICT	Information and Communication Technology
IFAD	International Fund for Agricultural Development
IFC	International Finance Corporation
IFDC	International Fertilizer Development Center
IFPRI	International Food Policy Research Institute
IMF	International Monetary Fund
IR	Intermediate Result
ISAR	Rwandan Agriculture Research Institute
ISP	Integrated Strategic Plan
JBSR	Joint Budget Support Review
JSR	Joint Sector Review
LWH	Land Husbandry, Water Harvesting and Hillside Irrigation
M&E	Monitoring and Evaluation
MCA	Millennium Challenge Account
MINAGRI	Ministry of Agriculture and Animal Resources (Rwanda)
MT	Metric Ton

MTEF	Medium-Term Expenditure Framework
NISR	National Institute of Statistics (Rwanda)
NSEM	National Multi-sectoral Strategy to Eliminate Malnutrition in Rwanda
OE	Operating Expenses
OPIC	Overseas Private Investment Corporation
OTF	On the Frontier
P4P	Purchase for Progress
PEFA	Public Expenditure and Financial Accountability Assessment
PEPFAR	President's Emergency Plan for AIDS Relief
PIO	Public International Organization
PMI	President's Malaria Initiative
PMP	Performance Management Plan
PSI	Policy Support Instrument
PSTA-II	Strategic Plan for the Transformation of Agriculture
SAKSS	Strategic Analysis and Knowledge Support System
SO	Strategic Objective
SPA	Sector Program Assistance
SWAp	Sector-Wide Approach
UNDP	United Nations Development Program
USADF	United States African Development Foundation
USDA	United States Department of Agriculture
USDH	United States Direct Hire
USAID	United States Agency for International Development
USTDA	United States Trade and Development Agency
WASH	Water, Sanitation, and Hygiene
WFP	World Food Program

1. DEVELOPMENT CHALLENGES AND OPPORTUNITIES

1.1 THE CHALLENGES

Rwanda has made remarkable progress since the tragedy of the 1994 genocide, with growth in real per capita income averaging over 4.5 percent and accelerating to an average of over 5.5 percent in the last five years.[1] It nevertheless remains one of the world's poorest countries. UNDP ranked Rwanda 152 out of 169 worldwide on its most recent Human Development Index.[2] According to the most recent household survey, undertaken in 2005/6, 57 percent of the population lives below a poverty line of approximately $1.30 per day, of which nearly two-thirds, or 37 percent of the total population, fall below an extreme poverty threshold of about $0.90 per day.[3]

Agriculture is extremely important to the Rwandan economy. Over 90 percent of households practice some form of crop cultivation while the sector serves as the principal source of employment for nearly 80 percent of the labor force and accounts for about a third of GDP.[4] However, these same figures also demonstrate that agricultural productivity is extremely low. Indeed, almost 90 percent of the labor force that makes its living from agriculture is classified as subsistence farmers, and over 60 percent falls below the poverty line.[5] Unsurprisingly, women are more likely than men to derive their livelihood from agriculture, be limited to subsistence farming, and live in poverty.[6] A survey undertaken in 2008 found that nearly half of all Rwandan agricultural households experienced food insecurity,[7] and female-headed households, which represent slightly less than a quarter of all Rwandan households, are more likely to be food insecure.[8]

Despite measurable progress since 2005, chronic malnutrition (stunting) among children under five years of age remains high at 44 percent.[9] These children will suffer the negative effects of chronic childhood malnutrition for their entire lives, as stunting in early childhood impairs brain development and worsens health outcomes. They will be less able to learn in school, less able to earn a living, and more likely to live in poverty as adults.

Increasing agricultural productivity is a necessary – even if not sufficient – condition to redress this situation. With virtually all arable land already under cultivation, Rwanda does not have the option of bringing more land into production. Its population density of 405 people per square kilometer of land is the highest on the African continent and means the average farm household's land holding amounts to

[1] Based on data from the IMF's WEO database, April 2011.
[2] UNDP, The Real Wealth of Nations: Pathways to Human Development, Human Development Report 2010.
[3] NISR, "EICV Poverty Analysis for Rwanda's Economic Development and Poverty Reduction Strategy," EICV 2005/06 Final Report, May 2007. Poverty lines are converted to purchasing power parity (PPP) using PPP values from the IMF's October 2010 WEO database.
[4] Labor force data comes from EICV 2005/06 Final Report. NISR estimated agriculture's share of GDP as 32 percent in 2010. In the last ten years, it has varied between 32 and 39 percent.
[5] EICV 2005/06 Final Report.
[6] Masanganise, Patricia, and Marie Nizeyimana, "Strategic Framework for Promoting Gender Equality in the Agriculture Sector," MINAGRI, draft of 26 October 2010.
[7] NISR, "National Agricultural Survey 2008 (NAS 2008)," February 2010.
[8] The percentage of female-headed households comes from the EICV 2005/06 Final Report while their food security status is reported in WFP et al., *Rwanda: Comprehensive Food Security and Vulnerability Analysis*, July 2009.
[9] This figure is a preliminary national result from the 2010 DHS. According to WFP et al., stunting among *rural* children under five years of age remained stubbornly persistent at over 50 percent – the second-highest level in sub-Saharan Africa after Malawi – between 2005 and 2009.

about three-quarters of a hectare, or less than two acres.[10] Furthermore, most arable land is on hillsides, with over 40 percent on slopes steeper than 28 degrees.[11] Combined with inadequate soil fertility management practices and continuous cropping, soil fertility has rapidly declined due to erosion and severe soil nutrient mining; it is estimated that between 39 and 51 percent of agricultural land in the country is already moderately or severely degraded.[12] Given the dependence of Rwanda's agricultural sector on rainfall, climatic shocks and increasingly variable rainfall could place the sector in a more unpredictable and vulnerable position.

Despite some evidence in recent years of increased use of inputs, only 13 percent of agricultural households used improved seeds, 16 percent used pesticides or fungicides, and 18 percent used chemical fertilizers in 2008.[13] Likewise, there remains plenty of scope for applying improved yet simple management practices, such as plant spacing, timing of operations, and water management, that have been shown to increase crop yields quite substantially in Rwanda.[14] Of course, more costly investments in improved transport, irrigation, and post-harvest storage infrastructure, as well as radical terracing, are also necessary to ultimately generate the levels of agricultural productivity growth necessary to substantially reduce food insecurity and poverty.

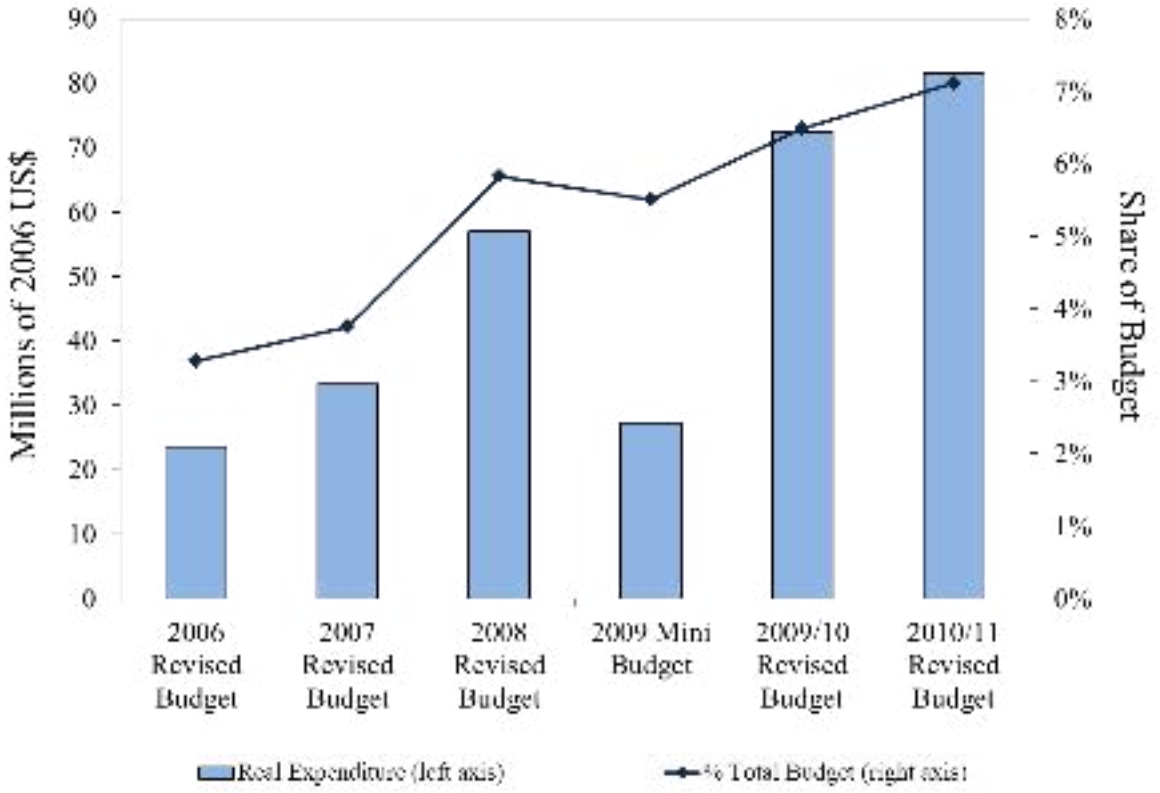
But raising agricultural productivity will not be sufficient to address chronic malnutrition. Recent increases in agricultural production, described below, seem to have had minimal impact on the rate of malnutrition, which may be more directly linked to poor feeding practices, shocks, household vulnerabilities, and limited access to quality health care. As Rwanda's former Minister of Health observed, "It is paradoxical that Rwanda has enough food to feed its children and yet we have cases of acute malnutrition. This proves that malnutrition is not just about the lack of food, but feeding practices, water, sanitation, hygiene, and food security – all of which contribute to good nutrition."[15]

1.2 THE OPPORTUNITY

The Government of Rwanda (GOR) has demonstrated substantial commitment to addressing these challenges and took numerous actions consistent with the Feed the Future (FTF) food security initiative even prior to its announcement. In March 2007, Rwanda became the first country to sign a Comprehensive Africa Agricultural Development Program (CAADP) compact,[16] committing itself to taking actions to generate sustained agricultural growth of six percent per year, including increasing the share of the state budget allocated to agriculture to 10 percent per year. Since compact signing, the GOR has increased the budget dedicated to agriculture, both in real terms and as a share of the overall budget, from about three percent prior to compact signing to over seven percent in its 2010/11 budget (see Figure 1).

[10] Population density is from 2009 and comes from the World Bank's African Development Indicators database. Average land holding comes from NAS 2008.
[11] DFID, "Sources of and Obstacles to Economic Growth in Rwanda: An Analytical Overview," Revised Draft, 13 February 2008.
[12] World Bank, "Promoting Pro-Poor Agricultural Growth in Rwanda: Challenges and Opportunities," Report No. 39881-RW, 1 June 2007.
[13] NAS 2008.
[14] DFID, 13 February 2008.
[15] Opening remarks by Dr. Richard Sezibera at Rwanda's First National Summit on Nutrition, 24 November 2009.
[16] CAADP is a regional agricultural program established by the African Union in 2003. It focuses on improving food security, nutrition, and increasing incomes in Africa's largely agriculturally based economies. For further information, see http://www.nepad-caadp.net/.

Figure 1. Evolution of Agriculture Expenditure, 2006-2010/11



This increased spending has financed a technically sound, well-consulted and -costed medium-term Strategic Plan for the Transformation of Agriculture (PSTA-II), with clear and ambitious quantitative targets tied to the Economic Development and Poverty Reduction Strategy (EDPRS), which itself is linked with the GOR's long-term *Rwanda Vision 2020*.[17] In another continental first, the GOR submitted the PSTA-II and its associated Agriculture Sector Investment Plan (ASIP), which analyzes available resources against PSTA-II costs to determine a financing gap (see Table 1), to a rigorous peer review process led by the African Union (AU) in December 2009. The review concluded that "the PSTA-II costing provides a reasonable basis for the Government and DPs [Development Partners] to commit funds to the sector over the medium term."[18]

The GOR's commitment to agricultural development appears to be paying off. Since 2007, annual agriculture sector growth has averaged over six percent in real terms, beating the CAADP growth target, and, for the first time since 1994, production during 2009's second harvest was estimated to be sufficient to cover the country's aggregate food requirements.[19] While favorable weather has no doubt

[17] *Rwanda Vision 2020* describes the GOR's long-term vision for the country and guides medium-term planning efforts, such as the EDPRS and PSTA-II. *Vision 2020* aims for sustained GDP growth of eight percent and reducing population growth from 2.9 to 2.2 percent per year in order to reach an average per capita income of $900 by 2020 and cut poverty in half from 60 percent in 2000. Achievement of *Vision 2020* rests on six pillars, including "Productive and Market-Oriented Agriculture," which reflects the GOR's commitment to transform Rwanda's current subsistence agricultural system to one that is commercially oriented.

[18] FAO, "FAO Technical Support Mission (1-12 February 2010): Aide Memoire," 19 February 2010.

[19] MINAGRI, "Sector Evaluation Report for the Joint Agriculture Sector Review for the Financial Year January – June 2009," September 2009. Rwanda's food requirements are estimated using the WHO standard of 2,100 kcal per person per day. It should be noted that there are some concerns regarding the quality of the data used to

played a role in these achievements, the GOR's Crop Intensification Program (CIP), which encourages land use consolidation through the provision of improved seeds and fertilizer, is credited with dramatically increasing yields of targeted staple crops – for example, maize yields rose by over 200 percent in the space of just two years.[20]

Table 1. Agriculture Sector Investment Plan2009-2012, Millions of US$

	Total Cost	GoR	Donors	Private Sector	Financing Gap
Program 1: Intensification and Development of Sustainable Production Systems	624.8	172.6	160.9	18.3	273.1
Program 2: Support to the Professionalization of Producers	42.0	7.8	18.8	0.6	14.7
Program 3: Promotion of Commodity Chains and Agribusiness Development	127.8	12.7	35.4	1.7	78.0
Program 4: Institutional Development	20.8	1.1	6.1	0.0	13.6
Total	**815.4**	**194.2**	**221.2**	**20.6**	**379.4**
o/w Private Sector					55.0

Note: Figures based on revised Agriculture Sector Investment Plan (post-FAO mission).

The GOR has demonstrated the same level of commitment in tackling malnutrition. Following a visit to a local hospital in April 2009, where he came face-to-face with the severity of the problem, the President launched his Emergency Plan to Fight Malnutrition, placing nutrition squarely on the national development agenda. As part of the Plan, more than 1.1 million children aged 6-59 months – representing 80 percent coverage – were screened for acute malnutrition in less than five months. Of these, over 77,000 cases, of which 17,000 were acute, were identified and treated. These achievements have since been leveraged to strengthen a comprehensive approach to preventing malnutrition. The GOR developed its "National Multi-sectoral Strategy to Eliminate Malnutrition in Rwanda" (NSEM), which focuses principally on the 1,000 days window of opportunity during pregnancy and the first two years of childhood and aims to reduce all forms of malnutrition in Rwanda by 30 percent by 2013.

1.3 DOING BUSINESS DIFFERENTLY

Rwanda's sound policy environment makes it a strong candidate for implementation of USAID's Implementation and Procurement Reform initiative, including making greater use of GOR systems as a channel for delivering U.S. assistance, thereby putting into practice a key FTF principle, "Invest in Country-Led Plans." Having established a track record of strong growth and macro-economic stability, Rwanda was approved for a Policy Support Instrument (PSI) by the IMF in June 2010, only the seventh such program approved. Rwanda also performs very well compared to its low-income peers on the Millennium Challenge Account (MCA) Control of Corruption and Government Effectiveness indicators, ranking at the 98th and 95th percentiles, respectively. Significant improvements in public financial management practices were recently documented in a Public Expenditure and Financial Accountability

substantiate this claim: (1) data is based on crop production forecasts, and (2) post-harvest losses are uniformly assumed to be 15 percent for all crops.

[20] IFDC, "Crop Intensification Program (2008-2009): Evaluation Report to MINAGRI," March 2010.

(PEFA) assessment,[21] and the pilot application of USAID's fiduciary risk assessment tool arrived at similar conclusions.[22]

Further, coordination arrangements in Rwanda, between the GOR and donors as well as among donors, are quite strong. Donors providing general and sector budget support participate in twice-annual Joint Budget Support Reviews (JBSRs), which serve as a forum to discuss general budgetary priorities and execution progress with the GOR. The JBSRs represent the culmination of a series of Joint Sector Reviews (JSRs), during which the GOR and donors take stock of sectoral progress and debate policy and budgetary priorities. Policy actions and performance information discussed during the JSRs make up a Common Performance Assessment Framework (CPAF), which donors providing budget support use to inform their disbursement decisions. An agriculture sector working group meets on a monthly basis to share information, monitor sectoral progress, and discuss policy issues while efforts are underway to strengthen a nascent sector-wide approach (SWAp). Meetings of the Multi-sectoral Committee for the Elimination of Malnutrition, as well as of the nutrition technical working group, likewise provide opportunities to coordinate nutrition investments and discuss policy issues.

2. FEED THE FUTURE OBJECTIVE, PROGRAM STRUCTURE, AND IMPLEMENTATION

2.1 FEED THE FUTURE RESULTS FRAMEWORK

Most U.S. assistance to Rwanda is guided by an Integrated Strategic Plan (ISP) developed by USAID for FYs 2004-09, amended as necessary by annual Operational Plans. The ISP includes a results framework for an Economic Growth Strategic Objective (SO) titled "Expanded economic opportunities in rural areas." At the time the SO was developed, U.S. assistance for agricultural development was relatively modest and focused on the promotion of high-value exports, such as specialty coffee. Such funds were complemented by some monetized P.L. 480 / Title II food assistance resources that were used to encourage rural road rehabilitation, terracing, seed multiplication, and other efforts to raise agricultural productivity.[23]

Over time, the results framework was adjusted in response to changes in the program budget since FY 2004; work undertaken in support of the FTF initiative, including preparation of the FY 2010 Implementation Plan; and the publication of the PSTA-II and ASIP. Though not explicitly considered when the ISP was originally developed, certain investments by other U.S. Government agencies, such as the African Development Foundation (USADF), Overseas Private Investment Corporation (OPIC), and Trade and Development Agency (USTDA), clearly contribute to the achievement of the SO.[24] The U.S.

[21] Morachiello, Elena, et al., "Government of Rwanda Public Financial Management Performance Report," 30 November 2010.
[22] USAID, "Rwanda: Stage 1 Rapid Appraisal," 18 January 2011, and USAID, "Stage 1 Questionnaire/Rwanda," 15 December 2010.
[23] The P.L. 480 / Title II monetization program ended in FY 2010 at the request of the GOR.
[24] In FY 2010, USADF invested over $1.2 million in support of various commodity cooperatives and businesses. OPIC has provided support to SORWATHE, a U.S. privately controlled tea producer, since 1978 while USTDA has undertaken several feasibility studies, including of a rail link that could significantly reduce transport costs, which currently are 1-1/2 to 2 times higher than the average for sub-Saharan Africa (see IFC, *Doing Business 2011: Making a Difference for Entrepreneurs*, 2010).

Government's Economic Growth strategy in Rwanda would benefit from further engagement from such agencies, as well as the Export-Import Bank (Ex-Im) and Peace Corps.[25]

Likewise, the ISP includes a results framework for a Health SO, though it was developed prior to the launch of major initiatives, such as the President's Emergency Plan for AIDS Relief (PEPFAR) and the President's Malaria Initiative (PMI), both of which target Rwanda and account for the vast majority of the growth – nearly 350 percent – in program funding seen over the life of the ISP. But until the launch of the FTF initiative, nutrition was a minor element of the U.S. Government's Health strategy in Rwanda, with most nutrition funding directed at meeting the specific nutritional needs of people living with HIV/AIDS under PEPFAR.[26] Rwanda is now also considered a Global Health Initiative (GHI) and BEST focus country,[27] and the GHI/BEST strategies outline a new Whole-of-Government Health approach for U.S. assistance to Rwanda that also includes nutrition as a priority.

Figure 2 illustrates the relationships between the U.S. Government's existing Economic Growth and Health strategies and the FTF results framework while Table 2 provides a mapping of Intermediate Results to FTF Second-Level Objectives.

Table 2. Mapping Intermediate Results to Feed the Future Second-Level Objectives

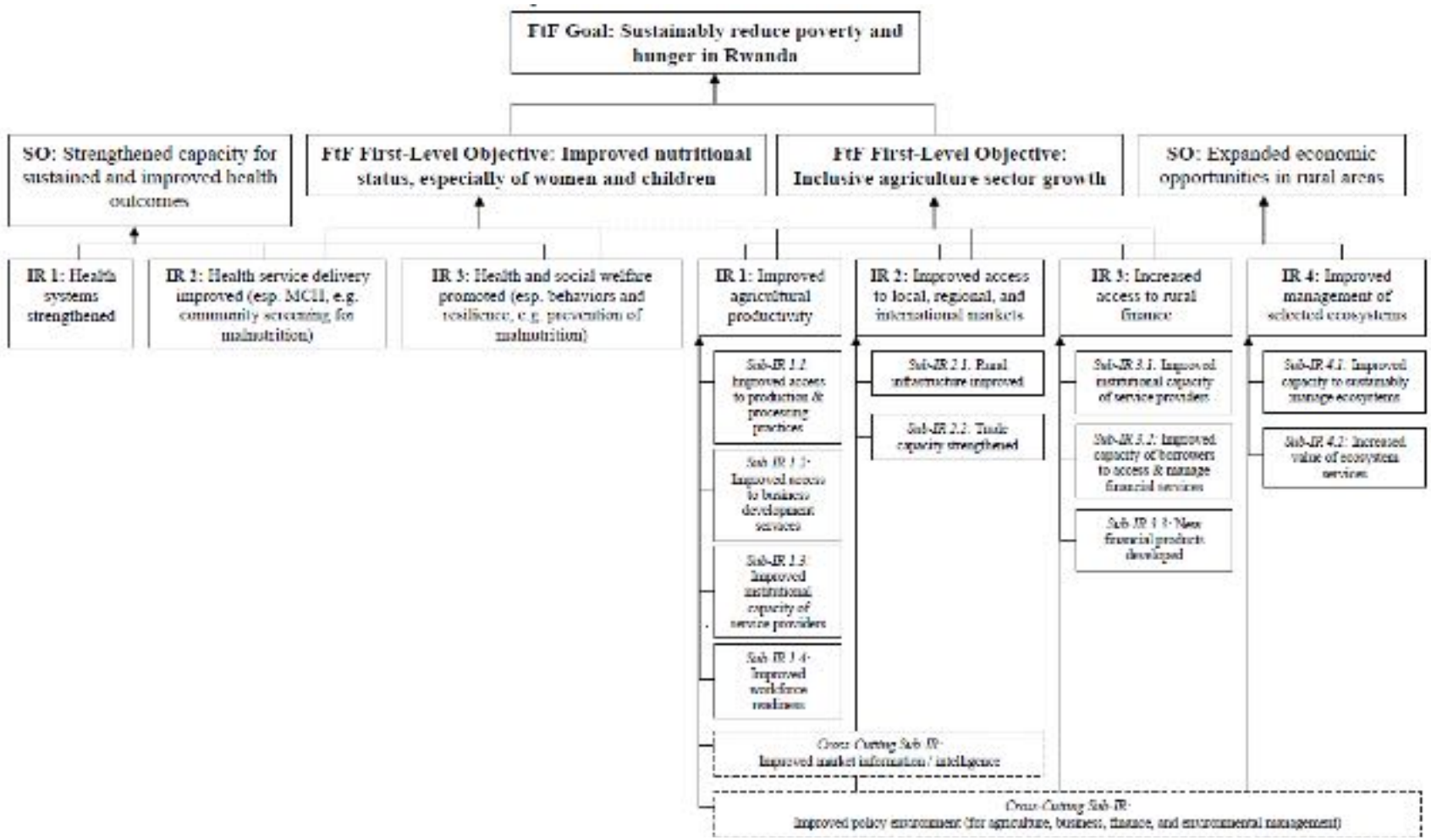
Intermediate Result	FTF Second-Level Objective
Health systems strengthened	N/A
Health service delivery improved	Improved utilization of maternal and child health and nutrition services
Health and social welfare promoted	Improved nutrition-related behaviors; Increased resilience of vulnerable households and communities
Improved agricultural productivity	Improved agricultural productivity
Improved access to local, regional, and international markets	Improved markets
Increased access to rural finance	Increased private investment in agriculture- and nutrition-related activities
Improved management of selected ecosystems	N/A

[25] There are several projects that could potentially benefit from OPIC and/or Ex-Im financing. As of FY 2011, all Peace Corps volunteers have a secondary job description of promoting food security, supported by an FTF Small Project Assistance fund.

[26] Between FYs 2007 and 2009, approximately $120,000 per year was spent on maternal and child nutrition as part of integrated health service delivery programs.

[27] BEST stands for "Best Practices at Scale in the Home, Community and Facilities." It is an action plan for integrated programming in family planning, maternal and child health, and nutrition under the GHI.

Figure 2. Feed the Future Results Framework



2.2 OTHER ALIGNED U.S. GOVERNMENT ASSISTANCE

The U.S. Government has consistently supported World Food Program (WFP) operations in Rwanda, principally with in-kind food assistance. Historically, this has taken the form of emergency assistance for refugees. However, in recent years, Rwanda has also benefited significantly from the McGovern-Dole school feeding program managed by the U.S. Department of Agriculture (USDA), which additionally managed a pilot program to introduce gardens as a learning tool in secondary schools. In both cases, the primary objective is educational, but the programs have important secondary nutritional benefits for school-age children and form part of the NSEM's plan to reach 80 percent of Rwanda's population with community-based nutrition programs (CBNP).

More recently, USAID made a modest contribution to WFP's Purchase for Progress (P4P) program, currently being piloted in Rwanda and several of its regional neighbors. The P4P program may offer an opportunity for WFP operations, such as the school feeding program, to enhance their contributions to FTF, PSTA-II, and ASIP objectives. By providing farmers with a significant market for their commodities, the P4P program can help stimulate local agricultural production and raise quality standards. As a result of their adherence to quality standards demanded by WFP, cooperatives that have successfully sold their commodities to WFP have also secured additional contracts with private processors, reflecting the catalytic effect such assistance can have on private sector development in the agriculture sector.

2.3 MODELS OF CHANGE

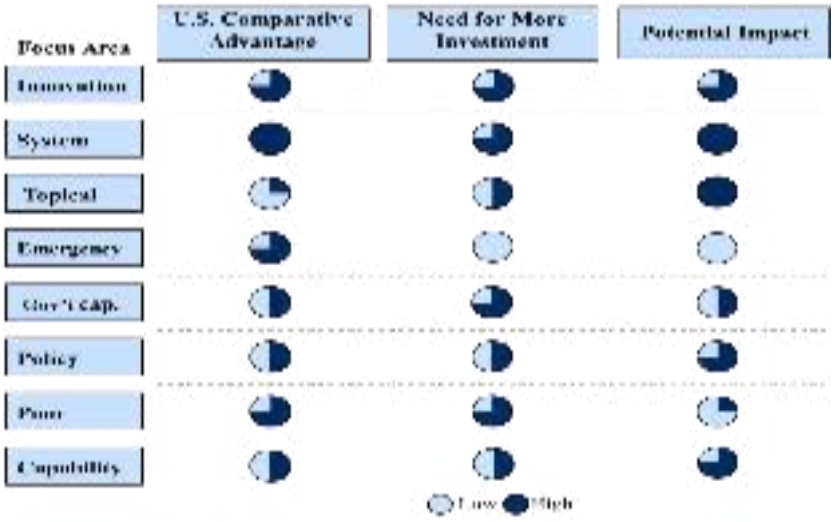
Development assistance aims to foster change, and in identifying the appropriate roles for U.S. assistance in implementing the FTF strategy in Rwanda, eight models of change were considered.[28] Selection of change models was based on U.S. comparative advantage; the need for more investment given the number of donor organizations operating in each area, as well as the scale of their investments; and the potential for impact (see Figure 3).

Analysis of these various factors led to the selection of the following change models for implementing the U.S. FTF strategy in Rwanda:

- Drive **systems transformation** in targeted staple and high-value crop value chains by developing sustainable market linkages and undertaking complementary infrastructure and nutrition investments.
- Deliver **innovations** to enable sustainable agricultural growth and improved nutrition.
- Advocate for improved food security **policy**.

[28] McKinsey&Company, "Thought starters for strategic prioritization," 3 June 2010. The eight models were: innovation engine, system-wide transformer, topical expert, emergency responder, government capacity builder, policy advocate, voice of the poor, and capability builder.

Figure 3. Selecting Models of Change



2.4 PRIORITY VALUE CHAINS

Investments will be focused on a selected number of value chains for maximum impact. Factors considered in a preliminary effort to identify priority value chains are noted in Table 3. U.S. comparative advantage; GOR priorities; potential impact, both in terms of poverty reduction and the number of households reached; and Rwanda's competitiveness. Further analysis completed in late 2010 led to the selection of beans, including soy; maize; and dairy as priority value chains while limited investments will be undertaken to sustain gains made to date in two traditional high-value exports, coffee and pyrethrum.

Beans and maize emerged as the highest-ranked staple crops according to a model that considered eight variables grouped in two major categories: farmer benefit and crop competitiveness.[29] Their selection was robust to a variety of different weighting schemes. By 2013, beans and maize are planned to cover 481,403 and 287,100 hectares, respectively, under the CIP, making them the GOR's highest priority staple crops.[30] And because much of Rwanda is characterized as a mixed rain-fed temperate/tropical highland agricultural system, climate change models suggest production of beans and maize is likely to rise significantly by 2050, in contrast to some of its regional neighbors, including Tanzania and Uganda.[31] Further, beans and maize are highly complementary; they are often rotated and require similar drying and storage infrastructure, providing potential economies of scale for investments. When one considers soy, the three crops also provide some of the highest nutritional content among Rwanda's staples (see Figure 4). Partly in recognition of the potential food security benefits of soy, the GOR has expressed interest in expanding its production as a sub-set of its CIP investments in beans. Soy's strong nitrogen-fixing properties can aid in the regeneration of Rwanda's depleted soils, making it a better rotation crop with maize than traditional bush beans or recently introduced climbing beans.

[29] OTF Group, "Value Chain Analysis for Beans, Maize, and Soy in Rwanda," May 2011. The eight variables were: crop risk, crop nutrition, households affected, crop revenue, GOR/donor funding, potential surplus, regional demand, and domestic demand.

[30] Nearly one-third of the country's arable land will be planted with beans and maize in season 2013 A if these plans materialize.

[31] Thornton et al., "Adapting to climate change: Agricultural system and household impacts in East Africa," *Agricultural Systems* 103: 73-82, 2010.

Although the preliminary analysis of value chains did not appear to support the selection of dairy, several factors led to its inclusion as a priority for investment. First, the competitiveness of Rwanda's dairy industry within the region is increasingly recognized. A 2008 analysis identified the dairy sector as one of the top three manufacturing clusters with potential in Rwanda.[32] Further, milk production has more than doubled since 2006 – to nearly 335,000 tons in 2009 – while the conditions for expanded processed milk production, namely the adoption of quality standards consistent with those of the broader region and introduction of differential pricing based on quality, accomplished with USAID support, should help the industry respond to latent demand within Rwanda and the region. Specific opportunities include the GOR's recent introduction of a school milk program, which the NSEM expects will reach all children from Nursery to Primary Level 3 with a cup of milk twice a week during the school term, as well as the 8 to 10 containers of ultra-heat treated milk per day estimated to constitute the export market to DRC and Burundi.

Second, to date, cows have been distributed to over 100,000 households under the GOR's "One Cow per Poor Family" program, providing its poor beneficiaries with an asset that will allow them to enter the dairy value chain.[33] The program aims to eventually reach 270,000 households, and while large livestock, such as cattle, are typically controlled by men in Rwanda, at least 30 percent of the program's benefiting households are expected to be women-headed.[34] Third, consumption of milk, increasingly promoted by the GOR, such as through the school milk program, which is a key element of the NSEM's plan to reach 80 percent of Rwanda's population with CBNP, has enormous nutritional and food security benefits. Finally, the dairy industry constitutes a potential source of demand for the increased production of beans, including soy, and maize expected under the CIP – in the form of animal feed.[35]

[32] OTF Group analysis for RIEPA (now RDB), 2008, as cited in OTF Group, "Recommendations for Investment in Rwanda's Horticulture Value Chains," October 2010.

[33] The "One Cow per Poor Family" program is modeled on the USAID-funded Small Scale Dairy Development Project, implemented by Heifer International from 2000-2004.

[34] Masanganise and Nizeyimana, 26 October 2010. However, the program's lack of clear gender-sensitive guidelines in its distribution criteria constitutes a significant obstacle to achievement of this target. The gender strategy for the agriculture sector recommends correcting this and collecting gender-disaggregated data on program beneficiaries.

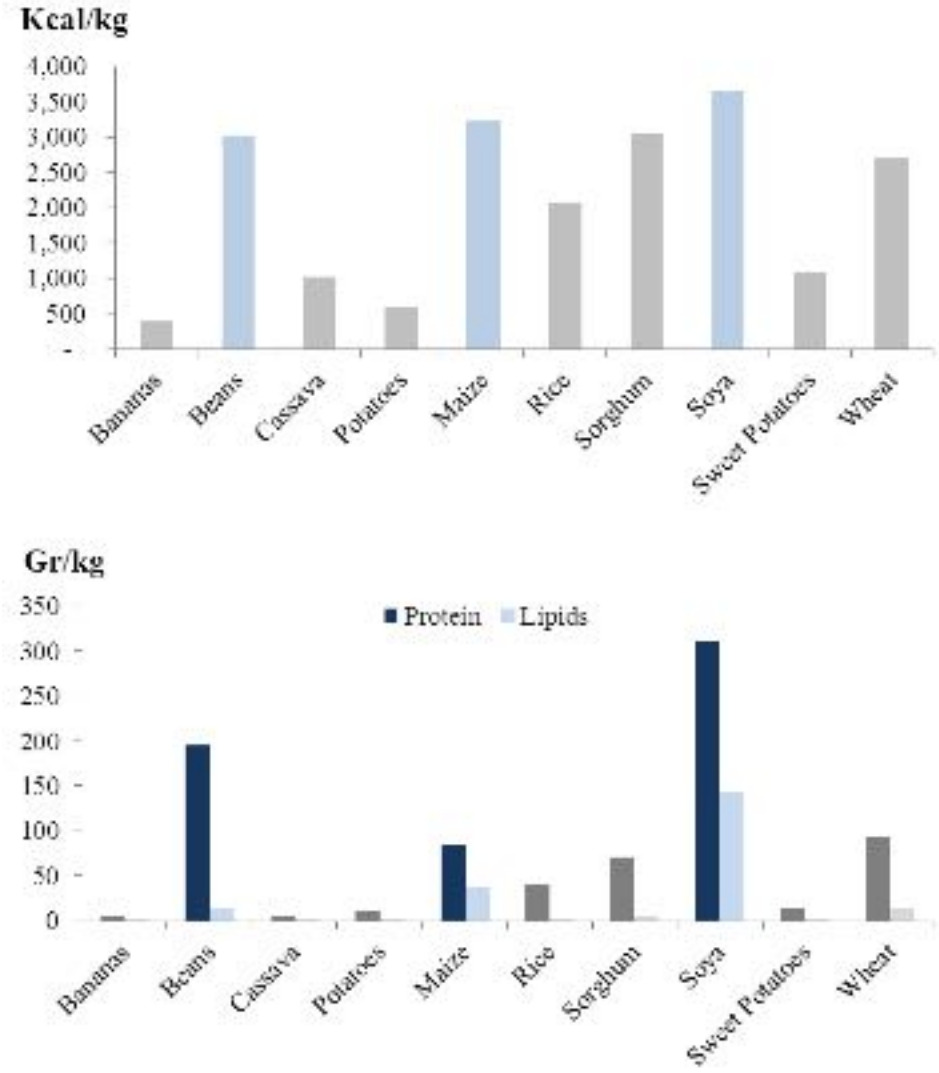
35 However, as the GOR's post-harvest strategy notes, the dairy industry alone is unlikely to drive the development of a concentrated feed industry, whereas the development of a commercial poultry industry appears to offer greater opportunities in this regard. See MINAGRI, "National Post-Harvest Staple Crop Strategy," March 2011.

Table 3. Preliminary Factors for Value Chain Selection

Product	U.S. Comp. Advantage[1]	GOR Priority[2]	Potential Impact		Competi-tiveness[5]
			Poverty Elasticity[3]	% HHs[4]	
Banana			-2.05	40.0	51
Beans		CIP	-2.59	66.2	1,485
Cassava		CIP	-1.60	52.2	-139
Coffee	√	√	-1.81	11.4	44,535
Dairy	√		-1.38	10.3	-1,297
Fish			-2.11	4.2	-1,722
Flowers			-2.27	9.7	295
Fruits			-2.27	25.2	49
Maize		CIP	-2.39	66.9	-2,201
Oil crop			-2.17	24.7	-1,286
Potato		CIP	-1.40	43.0	-91
Poultry			-0.45	4.1	-6
Pyrethrum	√		-2.27	0.8	103
Rice		CIP	-1.86	4.3	-6,130
Sweet potato			-1.65	75.0	5
Tea	√	√	-1.63	1.4	60,247
Vegetables			-2.27	38.1	4,189
Wheat		CIP	-1.60	7.0	-106

1 A check reflects recent U.S. Government experience in supporting the value chain in Rwanda.
2 GOR priority value chains are those included in the CIP and the exports for which specific actions were identified and prioritized in the EDPRS.
3 Diao et al., 2010, based on data from 2006. The study provides an elasticity for "other export crops," which is uniformly applied to flowers, fruits, pyrethrum, and vegetables.
4 NAS 2008. Figures refer to the higher of seasons 2008 A & B.
5 Net exports, US$ '000s, 3-year average, 2006-08. UN COMTRADE database.

Figure 4. Nutritional Value of Staple Crops



Source: OTF Group, May 2011, based on MINAGRI data.

While IFPRI research shows that, in general, increasing staple food crop production can be expected to have significantly greater poverty-reducing impact in Rwanda,[36] there are good reasons for investing in high-value crops as well. Promotion of high-value exports is a priority of the GOR, as identified in the PSTA-II and ASIP, and, as previously noted, U.S. assistance has historically supported the development of the specialty coffee industry in Rwanda. An impact evaluation was commissioned in late 2010 to determine if the industry had reached a "tipping point" beyond which further improvements in the value chain could be led by the private sector without continued investments under the FTF initiative. While the evaluation attributed significant growth in specialty coffee exports, growth in farmer incomes, and reductions in poverty since 2000 to U.S. assistance, it concluded that the industry has not yet reached its tipping point.[37] It therefore recommended that USAID remain engaged in the coffee sector under

[36] Diao et al., Agricultural Growth and Investment Options for Poverty Reduction in Rwanda, IFPRI, 2010.
[37] Oehmke et al., "The Impact of USAID Investment on Sustainable Poverty Reduction among Rwandan Smallholder Coffee Producers: A Synthesis of Findings," 19 May 2011. The growth in exports of fully washed

the FTF initiative with a targeted program to cement the gains achieved to date for Rwanda's nearly 400,000 coffee farmers.

Diversification of Rwanda's agricultural exports – in 2009, tea and coffee accounted for over 80 percent of agricultural exports – is important to reduce the sector's susceptibility to international price shocks. Work is already underway to develop the pyrethrum value chain. Rwanda's geography makes the country an ideal location for pyrethrum production, and it hosts the region's sole full-scale processor. While only about 8,000 households are currently involved in the value chain, production is far below both global demand and existing processing capacity, and a link with the international market is already established through a Global Development Alliance (GDA) with SC Johnson, a U.S.-based multi-national company. The GDA provides an excellent model for engaging U.S.-based companies in Rwanda and establishing linkages between Rwandan farmers and the international market.

2.5 REGIONAL AND CROSS-CUTTING ISSUES

The GOR has prioritized regional integration as a means of achieving its ambitious *Vision 2020* goals, including by positioning Rwanda as a services hub and link between the East African Community (EAC) and DRC. It recognizes that, as a small, landlocked country, Rwanda's economic development and the stability that underpin it are greatly dependent on its neighborhood.[38] The GOR has been a strong advocate of deeper integration within the EAC, playing a leadership role in advancing regional projects in, for example, the energy and transport sectors. Given the GOR's commitment to regional integration as a core element of its national development strategy, an important component of the FTF strategy in Rwanda is advocacy for greater attention to those regional issues that have the greatest impact on food security locally, including transit efficiency, food safety and quality standards, market information, and research, all key elements of the East Africa FTF strategy.

Rwanda is justifiably recognized for the strong leadership role played by its women – over half of Parliamentarians are women, as is the current Minister of Agriculture – and the sound legal framework in place aimed at protecting the principle of gender equality. For example, Rwanda is among the 13 countries in sub-Saharan Africa that grants men and women equal land ownership and inheritance rights.[39] Within the agriculture sector, sensitivity to gender is a core principle of the PSTA-II, and at least 30 percent of cooperative management committees are required to be women.[40] Yet, as previously noted, significant gender disparities remain. In an effort to ensure programs are sensitive to the underlying conditions that result in such disparities, the GOR recently completed a gender strategy for the agriculture sector which identified key gaps in the PSTA-II and ASIP needing attention.[41] And to better integrate gender considerations into resource planning, the Ministry of Finance began asking line ministries, of which the Ministry of Agriculture (MINAGRI) was one of four selected for a "gender responsive budgeting" pilot program in 2009, to submit a gender statement along with its annual budget request. As is detailed in the next section, some FTF investments will target women specifically but all will reflect the findings and recommendations of the agriculture sector's gender strategy in their design.

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coffee from 32 tons in 2002 to 5,800 tons in 2010 was qualitatively attributed to U.S. assistance, whereas the income difference of 82 percent and the 17 percent difference in poverty headcount between treatment and control groups were statistically attributed to U.S. assistance.

[38] Rwanda's regional competitiveness in and the size of the regional market were important considerations in selecting value chains for FTF investment.

[39] World Bank, Women, Business, and the Law: Measuring Legal Gender Parity for Entrepreneurs and Workers in 128 Economies, 2010.

[40] Masanganise and Nizeyimana, 26 October 2010.

[41] Ibid.

Gender equality is also recognized as essential to the success of national health programs, including nutrition. It is a central pillar of the GHI strategy for Rwanda, cutting across all health interventions. Promotion of gender equality for improved nutrition includes encouraging increased male involvement in maternal, child, and reproductive health and nutrition programs, as well as linking low-income women and child- or women-headed households to income-generating activities and social welfare programs.

Given the dependence of Rwanda's agricultural sector on rainfall, efforts to adapt to climate change are important to the sustainability of FTF investments. An environmental capacity assessment of MINAGRI found that coordination among the various line ministries with a role in environmental management, as well as coordination between the central and local levels, was in need of strengthening.[42] Described in greater detail in the next section, a planned integrated watershed resources management program will include a significant policy support component to assist the GOR with the development and implementation of an integrated water resources management strategy as the foundation of Rwanda's climate change adaptation efforts and facilitate enhanced coordination among relevant line ministries. Certain other FTF investments, detailed below, will seek to help Rwanda's agricultural sector adapt to climate change.

2.6 KEY RISKS

There are three key risks to the successful implementation of this strategy. First, despite its high level of commitment, GOR capacity to implement the PSTA-II is limited. MINAGRI is a lean organization, with recurrent expenditure consuming less than 20 percent of the Ministry's budget. An evaluation of the CIP, the GOR's most significant investment in agricultural intensification, found that less than one percent of the program's costs went to administration.[43] But there are also significant skill gaps, particularly in the areas of strategic planning, monitoring and evaluation (M&E), and post-harvest management.[44] The Ministry has developed a capacity development plan that will guide planned U.S. support to strengthen M&E and public financial management capacity, detailed below, and 50 Rwandans recently completed advanced degree studies at universities abroad, mostly in India with support from IFAD and several other donors. However, in addition, a key priority for the emerging agriculture SWAp is the rationalization of the numerous donor-supported projects within the Ministry to ensure existing capacity is effectively utilized. Consistent with the objectives of USAID's Implementation and Procurement Reform initiative, the U.S. Government will explore channeling a portion of FTF assistance through GOR systems as a means of better utilizing and strengthening public sector capacity.

Second, while the GOR is clearly committed to the FTF vision that agricultural development must be private sector-led, its desire to see quick results occasionally leads it to intervene in markets when it perceives the private sector is unable to act in an expeditious manner. This view is not entirely without merit. Although Rwanda has catapulted from 143rd to 58th on the IFC's "Doing Business" rankings in the space of just two years, it has yet to see significant increases in investment as a result of these efforts, particularly in the agriculture sector. The ASIP was only able to identify about $75 million of private sector investments to support PSTA-II implementation, most of which remain uncommitted. Further, the Rwandan private sector suffers from capacity limitations similar to or even more pronounced than those found in the public sector. Nevertheless, GOR intervention in markets can have unintended, negative consequences on the long-term development of the private sector.[45] U.S. Government

[42] World Bank, "MINAGRI Environmental Capacity Assessment Report," June 2010.
[43] IFDC, March 2010.
[44] Pell, John D., "Strategic Capacity Constraints in Delivering the Crop Intensification Programme," Africa Governance Initiative Strategic Capacity Building Project, August 2010.
[45] For example, the World Bank's *Investing Across Borders 2010* report notes that (p. 45) "Rwanda is one of the most open countries to foreign equity ownership. In practice, though, a number of sectors are characterized by

engagement at the policy level through the provision of sector program assistance (SPA), detailed below, will seek to promote more robust dialogue between the GOR and the private sector and mitigate such unintended consequences.

Finally, without further political development, as measured by, for example, the MCA Political Rights, Civil Liberties, and Voice and Accountability indicators, there is a risk that the tremendous socio-economic progress witnessed in Rwanda since the genocide may not be sustainable or could even be reversed.[46] A three-year MCA threshold program aimed at strengthening the judicial sector; increasing civic participation at both the local and national levels; and strengthening independent media is currently underway while a land conflict mitigation program, which will seek to engage citizens in the development of land policy and monitoring its implementation, has been designed to complement the DFID-supported, formal land titling and registration effort. Consistent with the recommendations of a recent USAID post-conflict recovery assessment, and drawing on the experience of the MCA threshold program, particularly its efforts to strengthen civic participation, FTF investments will seek to maximize meaningful citizen engagement in decision-making, implementation, and oversight.

3. CORE INVESTMENT AREAS

All FTF investments detailed in this section are closely aligned with the GOR's PSTA-II, ASIP, and NSEM. Table 4 illustrates how FTF programs will contribute to PSTA-II and ASIP programs and sub-programs while the Annex provides a mapping of each FTF program to the U.S. Government's foreign assistance framework program elements and strategy IRs.

monopolistic or oligopolistic market structures dominated by publicly owned enterprises, making it difficult for foreign investors to enter."

[46] McDoom, Omar Shahabudin, "Rwanda's Exit Pathway from Violence: A Strategic Assessment," *World Development Report 2011* Background Case Study, April 2011.

Table 4. : FTF Support to PSTA-II / ASIP

PSTA-II / ASIP Programs & Sub-Programs	FtF-Supported Programs
Program 1: Intensification & development of sustainable production systems	
SP 1.1 Sustainable management of natural resources and water and soil preservation	Land Husbandry, Water Harvesting and Hillside Irrigation
	Rwanda Integrated Water Security Program (FtF resources)
SP 1.2 Integrated systems of crops and livestock	Dairy Value Chain Development
SP 1.3 Marshland development	
SP 1.4 Irrigation Development	Land Husbandry, Water Harvesting and Hillside Irrigation
SP 1.5 Supply and use of agricultural inputs	Privatization of Rwanda's Fertilizer Import and Distribution System
SP 1.6 Food security and vulnerability management	Famine Early Warning System
	Beans/Maize Value Chain Development
	Integrated Improved Livelihoods Program, incl. Nutrition
	Rwanda Integrated Water Security Program (WASH resources)
Program 2: Support to the professionalization of the producers	
SP 2.1 Promotion of farmers' organizations and capacity building for producers	Privatization of Rwanda's Fertilizer Import and Distribution System
	Beans/Maize Value Chain Development
	Dairy Value Chain Development
	Coffee/Pyrethrum Value Chain Development
SP 2.2 Restructuring proximity services	
SP 2.3 Research for transforming agriculture	Research Capacity Building Program
Program 3: Promotion of commodity chains and agribusiness development	
SP 3.1 Creating conducive environment for business development and market access	
5P3.2 Development of traditional exports	Coffee/Pyrethrum Value Chain Development
SP 3.3 Development of non -traditional high-value export products	
SP 3.4 Production and value addition for domestic staple products	Beans/Maize Value Chain Development
SP 3.5 Market-oriented rural infrastructure	Beans/Maize Value Chain Development
	Dairy Value Chain Development
	Rwanda Rural Feeder Roads Improvement Program
SP 3.6 Strengthening rural financial systems	Development Credit Authority
	Access to Finance Rwanda
	Integrated Improved Livelihoods Program
Program 4: Institutional development	
SP 4.1 Institutional strengthening and capacity building	Agriculture Sector Capacity Building Program
SP 4.2 The policy and regulatory framework for the sector	Sector Program Assistance
SP 4.3 Agricultural statistics and ICT	Famine Early Warning System
	ICT for Agriculture
SP 4.4 M&E systems and coordination of the agricultural sector	Agriculture Sector Capacity Building Program
SP 4.5 The decentralization programme in agriculture	

3.1 SYSTEMS TRANSFORMATION: SUSTAINABLE MARKET LINKAGES

As previously noted, the GOR's efforts to promote the intensification of staple crop production under the CIP have been extremely successful. However, the current approach of providing subsidized inputs is not sustainable. FTF assistance will therefore support GOR plans to gradually privatize the fertilizer market. A five-year, $7.4 million Public International Organization (PIO) grant to the International Fertilizer Development Center (IFDC) will help MINAGRI develop and implement an exit strategy while simultaneously strengthening the capacity of the private sector to import and distribute fertilizers. U.S. support will complement work undertaken by IFDC with support from the Netherlands and the Alliance for a Green Revolution in Africa (AGRA) to develop a nation-wide network of private agro-input dealers. It should be noted that women's access to agricultural inputs, such as fertilizer, is more limited than men's.[47] IFDC is therefore seeking to include more women in the agro-input dealer network who might better understand the extension needs of women.

[47] Masanganise and Nizeyimana, 26 October 2010.

In addition, the CIP does not adequately address post-harvest challenges and marketing, largely due to resource constraints.[48] If left unaddressed, they will likely become binding constraints to further staple crop development, particularly in light of the GOR's CIP expansion plans. To its credit, the GOR has recognized this, and, in July 2010, established a post-harvest task force to develop a post-harvest staple crop strategy. Post-harvest losses for beans and maize are estimated to be as high as 30 percent,[49] which, depending on the assumptions made regarding yields, prices, etc., will amount to lost income of $38 to $111 million per year for the 675 thousand to 1 million Rwandan households that are expected to participate in these value chains through the CIP by 2013.[50] Given that beans and maize are typically considered "crops for women," minimizing post-harvest losses in these value chains and recovering as much of this lost income as possible for Rwanda's farmers could disproportionately benefit women.[51]

A 2-1/2-year program launched in 2009 aims to do precisely that for all staple crops by facilitating farmer adoption of improved post-harvest handling practices and technologies, engaging private investors in the construction of new storage infrastructure, and linking farmers to storage, conditioning, and processing centers. The program has developed a partnership with WFP's P4P program, whereby WFP purchases high-quality commodities from cooperatives supported by the program. By early 2012, the program will have reached 50,000 rural households, cut post-harvest losses for these households in half, leveraged nearly $1.5 million in private investment in post-harvest infrastructure, and facilitated the storage of 34,000 MT of commodities. Over the course of the strategy, this type of program will be scaled up significantly, albeit with a few refinements: a narrower focus on the beans and maize value chains; greater attention on the household level, which is a key element of the NSEM's plan to reach 80 percent of Rwanda's population with CBNP; and the inclusion of support to the GOR to expand production of highly nutritious soy beans as part of its CIP investments in beans.

FTF assistance will also seek to build on investments made to date to improve the quality of milk under an ongoing USAID-supported dairy competitiveness program. Having worked out a division of labor with complementary programs funded by the African Development Bank and the Gates Foundation, the program currently targets Rwanda's eastern dairy belt, reaching approximately 4,000 dairy farmers directly. However, it has also been instrumental in shaping policy at the national level through the recent establishment of the Rwanda National Dairy Board, which represents the industry. The program and, now, the Dairy Board have been strong advocates for the introduction of measures to improve the quality of Rwanda's milk supply. An evaluation of the program, completed in early 2011, recommended continued support to industry for engaging in policy dialogue with the GOR; expanding work at the producer level, which, in the space of a few years, led to 30 percent more milk produced from the introduction of simple and extremely cost-effective measures; and continued efforts to improve milk quality, particularly through the introduction of basic food safety standards and product traceability.

[48] IFDC, March 2010, and Pell, August 2010.

[49] IFDC, March 2010.

[50] These figures are based on the GOR's plans to place over 481 and 287 thousand hectares under, respectively, beans and maize cultivation by 2013. They assume storage rates of 10% for beans and 40% for maize. Assumed yields range from a low of current yields of both commodities to yields achieved with recently introduced climbing beans and hybrid varieties of maize. The number of benefiting households ranges from a low that assumes all households plant both commodities to a high that assumes households plant either beans or maize.

[51] Masanganise and Nizeyimana, 26 October 2010. However, what tends to distinguish "crops for women" from "crops for men" is their marketability. Thus, as beans and maize become more commercialized, they may increasingly become "crops for men." Consistently monitoring whether such changes occur will be necessary to determine whether adjustments are required over the course of program implementation.

Limited FTF assistance directed at the development of selected high-value crops will seek to cement the sustainability of U.S. investments in the coffee sector over the past decade and support the diversification of Rwanda's agricultural exports through continued investments in pyrethrum. However, as cash crops, both coffee and pyrethrum tend to be "crops for men," with men typically controlling income derived from them even when women are paid directly.[52] FTF investments in these value chains will therefore take deliberate measures to ensure women are given sufficient opportunities to participate.

The previously mentioned long-term impact evaluation of U.S. investments in the coffee sector recommended continuation of the U.S. Government's historic focus on improving quality under the FTF initiative through a targeted program that addresses the challenges to the timely provision of inputs to farmers, the continued professionalization of cooperatives, and the increasingly sophisticated demands of the international market, such as traceability and appellation. Simulations suggest that such a package of investments would likely reduce the poverty headcount of program beneficiaries from the current 65 percent – compared to a current poverty headcount of 82 percent within a comparable treatment group – to 44 percent, and potentially as low as 24 percent, by 2015.[53]

The same approach taken to develop the specialty coffee industry will be applied to the pyrethrum value chain, namely the focus on quality improvements and developing international market linkages. SC Johnson, the principal source of demand for pyrethrum, is committed to working with the U.S. Government under the FTF initiative to support quality improvements at the farm level through the provision of extension services via a strengthened cooperative network and strengthening the capacity of Rwanda's processor. Merely tapping into existing processing capacity and improving yields could generate an additional $22 million in revenue per year for pyrethrum farmers while estimated global demand could support a three-fold increase in processing capacity.

A major constraint to agricultural value chain development is limited access to finance. Access to finance is a general problem in Rwanda: a 2008 survey revealed that fully 86 percent of Rwandan adults have no access to formal banking products while over 50 percent are completely excluded from the financial sector, with exclusion rates for women (56 percent) higher than those for men (48 percent).[54] But despite serving as the principal source of employment for nearly 80 percent of the labor force and accounting for about a third of GDP, the agriculture sector is only allocated about 5 percent of credit from the formal financial system, most of which is directed at the traditional export crops of tea and coffee.[55] Drawing on its successful experience with loan guarantees using its Development Credit Authority (DCA) to strengthen the coffee value chain,[56] USAID plans to utilize DCA guarantees to encourage expanded agricultural lending for staple crop, dairy sector, and non-traditional export crop development. FTF assistance will also be used to co-finance the DFID-supported Access to Finance Rwanda (AFR) program, which is modeled on similar programs in Kenya and Tanzania and aims to facilitate the expansion and diversification of financial services to the poor and micro, small, and medium-sized enterprises. The AFR program is guided by an advisory board on which the U.S.

[52] Masanganise and Nizeyimana, 26 October 2010. About 30 percent of Rwanda's nearly 400,000 coffee farmers are women.
[53] Lyambabaje et al., "Sustainability and Impact of the PEARL/SPREAD Projects," presentation to USAID/Rwanda, 8 February 2011.
[54] FinMark Trust, *FinScope Rwanda Data book*, 2008. About one-third of the population is informally served by organizations that operate without legal governance. Of those that are completely excluded, over 80 percent are wholly engaged in farming.
[55] Napier, Mark, "Supply Side Study of the Inclusiveness of Rwanda's Financial Sector," report for NBR and DFID, 30 April 2010.
[56] SEGURA/IP3 Partners LLC, "Rwanda Bank of Kigali DCA Guarantee Evaluation," USAID, December 2009.

Government will serve, thus offering an opportunity to influence the allocation of a significant pool of resources contributed by DFID, the World Bank, and KfW whose objectives are closely aligned with FTF objectives. Finally, an Integrated Improved Livelihoods Program will aim to bring 75,000 of Rwanda's very poor, particularly women, into priority value chains to improve their livelihoods through expansion of responsible and appropriate access to finance, increased economic opportunities and incomes, and enhanced consumption of quality foods.

3.2 SYSTEMS TRANSFORMATION: INFRASTRUCTURE

A variety of complementary investments will support the development of priority value chains and ensure their food security benefits are maximized. Research commissioned by USAID calculated that Rwanda's smallholders lose between $40 million and $106 million in income per year due to inadequate rural feeder road infrastructure and estimated rates of return on investment in feeder roads to be on the order of 20 percent.[57] FTF assistance will therefore rehabilitate feeder roads in selected districts utilizing local firms and labor to the greatest extent possible. The program will support decentralization efforts currently underway by channeling resources through district government systems using Fixed Amount Reimbursement Agreements (FARAs). An international technical support contractor will be employed to strengthen capacity of district governments to plan, design, procure, monitor, and maintain roads projects. Key elements of the planning process that will be emphasized are community participation in decision-making and environmental management.

Other planned infrastructure investments include small-scale irrigation networks through the World Bank-managed Land Husbandry, Water Harvesting, and Hillside Irrigation (LWH) project. The project is central to GOR climate change adaptation plans in the agriculture sector and will apply a modified watershed approach to introduce sustainable land husbandry measures for hillside agriculture, such as terracing, on selected sites, each of which will include some irrigation infrastructure. The GOR expects the project to eventually reach 101 sites, covering 30,250 hectares, of which 12,000 will be irrigated. Funds committed to the project to date, including $50 million from the multi-donor Global Agriculture and Food Security Program (GAFSP) trust fund, are sufficient to implement the project in approximately 14 sites, covering an estimated 14,500 hectares and benefiting about 15,000 households. Land husbandry measures will increase staple crop productivity while the irrigated areas will support production of higher-value crops.

Complementing the LWH project is an integrated water resources management program that will simultaneously contribute to FTF, Global Climate Change initiative, and Water for the Poor Act objectives. The program will seek to improve the sustainable management of water resources to positively impact human health, food security, and resiliency to climate change for vulnerable populations in targeted catchments of Rwanda by attacking the integrated challenges depicted in Figure 5.

Figure 5. Integrated Problem Analysis for Food Security; Climate Change; and Water, Sanitation, and Hygiene (WASH)

[57] OTF Group, "How to determine Investments in Feeder Roads to Increase Farmer Access to Market?" Study Summary, May 2010.

Direct program beneficiaries over its life include:

- 150,000 people with access to improved, multiple-use water supply services for household and productive use;
- 50,000 people with access to improved sanitation services (hygienic latrines);
- 40,000 people with increased incomes and greater food security due to provision of multiple-use water supply; and
- 5,000 farmers adopting more efficient and climate resilient management practices, such as terracing.

Lastly, FTF assistance will strengthen Rwanda's agriculture-related information and communications technology (ICT) systems to improve access to quality market information. *Rwanda Vision 2020* outlines the GOR's commitment to the application of ICT as a means of transforming the country into a knowledge-based society. The ICT legal and regulatory environment encourages competition, and the GOR prioritizes investment in access to telecommunications services in areas that are not yet commercially attractive. Mobile phone service is thus widely available, and the number of subscribers, currently estimated at 32 out of every 100 Rwandans, has grown significantly in recent years even if Rwanda still lags behind other countries in the region in this respect. An agriculture market price information system, developed and maintained by the GOR with World Bank support, currently makes price information available via mobile phone or internet on a weekly basis for 27 commodities in 33 markets nation-wide. The FTF initiative will invest in improving the service, ensuring it is more responsive to farmer demand, expands to include additional features, such as mobile extension, and eventually becomes an attractive candidate for privatization.

3.3 SYSTEMS TRANSFORMATION: NUTRITION

While nutritional value was a key criteria in selecting priority value chains, planned value chain investments will be designed to ensure their nutritional benefits are maximized. Increasing the focus of post-harvest investments on the household level, as noted above, and targeting women with the Integrated Improved Livelihoods Program are expected to contribute to the FTF nutrition objective and are part of the NSEM's plan to strengthen and scale-up CBNP.

Interestingly, recent evaluative evidence suggests access to microfinance may contribute more to maintaining basic food security and nutrition than raising incomes due to its consumption-smoothing effects and the flexibility it offers in dealing with unexpected health emergencies.[58] Research also suggests that integrating microfinance with nonfinancial services, such as education on improved feeding and consumption practices, as is planned in the Integrated Improved Livelihoods Program, offers great potential to address the multiple needs of the poor in a more efficient manner.[59]

It is important to note that achieving the FTF nutrition objective in Rwanda will require investments beyond those which can be integrated into investments in priority value chains. Figure 6 illustrates how FTF assistance is expected to evolve in support of five key elements of the NSEM. Illustrative activities and expected results in each of these areas are as follows:

- **Strengthen and scale-up CBNP to prevent and manage malnutrition in children under five, with particular focus on those under two, and in pregnant and lactating mothers:** The NSEM anticipates that all villages nation-wide will have begun implementation of CBNP during the first year of the strategy. FTF assistance will help prevent and improve the management of moderate malnutrition at the community level through growth monitoring, individual and group nutrition counseling, the promotion of kitchen gardens, modeling a local tradition in which caregivers kept special food aside for infants and young children to feed themselves whenever hungry, and promoting behaviors practiced by mothers or caretakers of well-nourished children at the community level.

- **Elimination of micronutrient deficiencies:** FTF assistance will support the development of sound legislation and policy on fortification, including point-of-use fortification and the possible introduction of available products, such as "sprinkles." Support may also be provided for the purchase of seeds to grow vitamin- and mineral-rich fruits and vegetables in kitchen gardens. As local markets develop and consumption expands to include food beyond that which is produced at home, FTF assistance may support the development of a local food fortification industry, specifically targeting maize flour and dairy products. Such efforts will contribute to the NSEM's targets of reaching all children under five with micronutrient supplements and half of all children under two with fortified food complements.

- **Multi-sectoral District Plans to Eliminate Malnutrition:** FTF assistance will strengthen GOR capacity at the district level to undertake analysis for, formulate, and execute multi-sectoral nutrition plans. All districts will have draft plans completed in 2011.

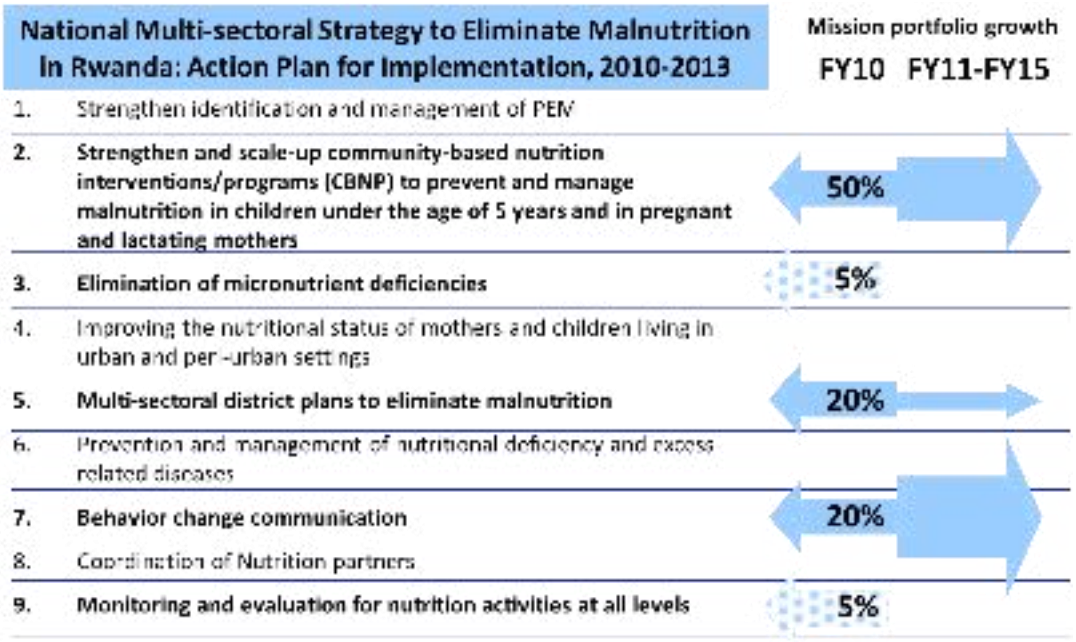
- **Behavior Change Communications (BCC):** The NSEM expects all districts to incorporate BCC in their multi-sectoral plans to eliminate malnutrition and all villages nation-wide to receive behavior change messages. FTF assistance will therefore assist the GOR with the formulation of standardized BCC nutrition messages and associated communication tools and training materials (e.g., counseling cards, pamphlets, suggested interpersonal messages, and public speeches for local leaders) with the aim of triggering voluntary changes in dietary behavior and practices that

[58] Rosenberg, Richard, "Does Microcredit Really Help Poor People?" CGAP Focus Note No. 59, January 2010.
[59] Dunford, Christopher, et al., "How microfinance can work for the poor: The case for integrating microfinance with education and health services," Freedom from Hunger discussion paper, 2007.

improve nutrition. A survey that can inform the prioritization and design of interventions, as well as an M&E plan, may be undertaken through community health and agriculture extension workers.

- **Monitoring and Evaluation for Nutrition activities at all levels:** FTF assistance will support improvements in the quality of routine reporting to monitor mild, moderate, and acute malnutrition among young children and pregnant and lactating women. For example, the Ministry of Health has introduced a system for providing community health workers with health and nutrition information and promptly reporting cases of malnutrition via mobile phone.

Figure 6. Support to NSEM



3.4 INNOVATION

It is well known that research generates some of the highest average returns to public investment in agriculture.[60] In Rwanda, where research capacity is extremely limited – it is estimated there are only about 30 people actively engaged in agriculture-related research with PhDs[61] – the returns are likely to be even higher. As a result, the country is not adequately prepared to meet the demands of producers for improved agricultural inputs and respond to emerging threats to agricultural productivity and food security, such as crop disease and climate change. Developing such capacity is all the more important in light of the GOR's policy to encourage land use consolidation. FTF assistance will therefore invest in strengthening Rwandan research capacity, with priority given to actionable, demand-driven research in support of priority value chains and nutrition objectives, such as maize and bean varieties that are more resistant to extreme weather events and post-harvest technologies that can be commercialized.

[60] "Feed the Future: Global Food Security Research Strategy," May 2011.

[61] Swanson, Burton et al., "Comprehensive Assessment of Extension Services in Rwanda," Modernizing Extension and Advisory Services project, 5 August 2011. The report identifies 25 PhDs in Rwanda's university system; ISAR has an additional six.

The program will aim to strengthen the capacity of the Rwandan Agriculture Research Institute (ISAR) to produce relevant research and develop systems, in cooperation with Belgian assistance, to ensure research results are disseminated to the field through an improved extension network. Drawing on USAID's extensive experience with higher education partnerships in Africa, the program will also provide cost-effective, long-term degree training by forging partnerships between U.S. and Rwandan universities so that the country begins to produce a steady stream of qualified agricultural researchers and extension agents. Consistent with the recommendations of the gender strategy for the agriculture sector, special efforts will be made to encourage female enrollment in agricultural universities as a means of ensuring the different needs of women are considered in the country's agricultural research and extension agendas.

3.5 POLICY

Concerted U.S. Government engagement at the policy level through the provision of SPA will ensure the FTF initiative in Rwanda has nation-wide impact. The policy dialogue with the GOR will seek to encourage more robust dialogue between the GOR and private sector and focus on key issues that are critical to raising productivity of staple crops and constitute core elements of the FTF strategy: privatization of the fertilizer market, post-harvest management, and land tenure security. The SPA will thus enhance the effectiveness of the technical support provided under the FTF initiative in these areas, and, similarly, the technical support will enhance the effectiveness of the SPA.

While the SPA will focus specifically on a few key measures to raise agricultural productivity, it can be expected to help strengthen the GOR-donor policy dialogue in the agriculture sector more generally and even to provide a platform for discussing other issues, such as food safety standards and climate change policy.[62] According to the FAO, the core elements of a strengthened dialogue include: more detailed annual planning and budgeting, strengthening existing monitoring arrangements such as the JSRs, and a strengthened M&E system so that discussions are grounded in reliable performance information.[63] Complementary technical support will therefore be provided to strengthen M&E capacity, including through the (re-)establishment of the Famine Early Warning System (FEWS) in Rwanda to strengthen data collection and analytical capacity on a number of issues that affect food security, such as climate change.

Because SPA resources will be channeled through GOR systems, it is important to have a full understanding of the risks the systems present so they can be mitigated. As previously mentioned, the general environment for making use of host-country systems in Rwanda is quite sound, with low levels of corruption and high levels of performance on various measures of the quality of public administration. The recent PEFA assessment found that substantial progress was made in the area of public financial management over the past three years, findings that were confirmed in the first phase application of USAID's fiduciary risk assessment tool. The second phase application of the tool, performed with the support the internationally recognized accounting firm, Deloitte, involved a detailed analysis of agriculture sector institutions' financial management systems and found that all identified risks can be mitigated through a targeted public financial management capacity building program within MINAGRI.[64] Such a program will complement planned support to strengthen the human and institutional capacity of

[62] Currently, the only donor providing agriculture sector program assistance is the EC, but USAID interest in launching an SPA operation has encouraged DFID, CIDA, and Japan to consider doing so as well.
[63] FAO, 19 February 2010.
[64] Deloitte Consulting LLP, "Summary Report on the Republic of Rwanda Ministry of Agriculture and Animal Resources (MINAGRI) Risk Assessment," 29 June 2011.

selected GOR institutions and civil society organizations that have a role in providing oversight of public expenditure and program performance.

4. MONITORING AND EVALUATION

4.1 PERFORMANCE MONITORING

USAID's existing Performance Management Plan (PMP) for its Economic Growth SO already includes several FTF indicators or indicators closely related to them. Efforts to strengthen the PMP's alignment with the initiative are underway while FTF nutrition indicators will be incorporated into the GHI/BEST PMP. USAID has developed a web-based performance monitoring tool that facilitates reporting from its implementing partners as a key element of its M&E system. This same system will be utilized to collect activity-level data on FTF indicators.

For many of the high-level FTF indicators, baselines will be established through two national surveys currently underway. Results from the Demographic and Health Survey (DHS), for which the U.S. Government is providing focused technical support to the National Institute of Statistics (NISR), will be available in late 2011 while results from a household survey, providing data on poverty levels, are scheduled to be released in early 2012. Consideration is being given to the regular application of an adapted version of USAID's Poverty Assessment Tool in order to obtain some indication of poverty trends between household surveys, which typically only take place every five years, while an interim DHS planned for 2013/14 and a Knowledge, Attitudes, and Practices survey will document changes in nutritional status and feeding practices. Efforts will also be made to utilize the Ministry of Health database to which community health workers report cases of malnutrition via mobile phone.

As previously noted, given identified gaps in data collection and performance monitoring in MINAGRI, the U.S. Government will seek to strengthen its M&E capacity through the establishment of a FEWS field presence and additional M&E technical support. Other donors, including DFID, the EC, and the World Bank, are helping to strengthen the NISR, including its collection and analysis of agricultural data. Improvement of agricultural statistics is a core element of the GOR's PSI program with the IMF, as data collection procedures that systematically over-estimated agricultural production were thought to compromise the reliability of the GOR's national income accounts data.

Given Rwanda's limited size and population, as well as planned U.S. Government engagement on several key policy issues that will have broad, national impact on agricultural development and nutrition, FTF assistance can be expected to substantively contribute to reductions in Rwanda's rural poverty and malnutrition rates. Through FTF in Rwanda more than 174,000 children will be reached with services to improve their nutrition and prevent stunting and child mortality. An estimated 713,000 vulnerable Rwandan women, children and family members will receive targeted assistance to escape hunger and poverty.[65].

[65] Disclaimer: These preliminary targets were estimated based on analysis at the time of strategy development using estimated budget levels and ex-ante cost-beneficiary ratios from previous agriculture and nutrition investments. Therefore, targets are subject to significant change based on availability of funds and the scope of specific activities designed. More precise targets will be developed through project design for specific Feed the Future activities.

4.2 IMPACT EVALUATION

Periodic impact evaluations conducted over the course of the strategy period will help identify the contributions of FTF investments to progress observed through regular performance monitoring, as well as programmatic adjustments that may be required. As an example, a recent impact evaluation of the U.S. Government's investments in the coffee sector over the past decade was used to inform a decision about whether continued support to the sector was warranted under the FTF initiative.[66] An evaluation of USAID's dairy competiveness program, undertaken in early 2011, likewise informed a decision to re-compete the program.

In addition, the Integrated Improved Livelihoods Program was selected for inclusion in USAID's FY 2012 Evaluation Initiative, requiring a rigorous impact evaluation of the program's central hypothesis that integrating microfinance with non-financial services, such as health and education, has the potential to address the multiple needs of the poor with greater efficiency and impact. The evaluation's design will commence with program start-up to ensure the necessary baseline data is collected from treatment and control groups. The evaluation itself is planned to take place during the program's third year of implementation so that lessons learned can be applied during its remaining two years.

5. FINANCIAL PLANNING

Table 5 places FTF assistance in the context of overall support for agriculture and nutrition in Rwanda. The PSTA-II, currently in its third year of implementation, will expire in 2012, and still faces a financing gap estimated at over $160 million out of its total cost of $815 million, while the NSEM is a three-year, $25.4 million strategy launched in June 2010.

[66] Oehmke et al., 19 May 2011.

Table 5. Planned Food Security Expenditures, US$

	FY 2010	FY 2011	FY 2012
GoR	**64,739,317**	**66,481,593**	**82,664,069**
PSTA-II[1]	64,235,189	65,765,133	81,620,456
NSEM[2] (non-MINAGRI)	504,128	716,460	1,043,613
USAID[3]	**27,000,000**	**49,495,000**	**51,700,000**
Agriculture	25,000,000	47,000,000	47,000,000
Nutrition	2,000,000	2,495,000	4,700,000
Other USG Agencies	**10,315,000**	**1,150,000**	**1,000,000**
USDA (school feeding)	9,100,000		
USADF[4]	1,215,000	1,150,000	1,000,000
Other Donors	**121,803,859**	**132,100,904**	**56,500,000**
Agriculture	121,803,859	132,100,904	56,500,000
Pre-CAADP mtg.[5]	78,637,192	57,934,237	
Post-CAADP mtg.[6] (add'l)	43,166,667	74,166,667	56,500,000
o/w GAFSP	12,500,000	12,500,000	12,500,000
Nutrition[2]	TBD	TBD	TBD
Private Sector[7]	**6,550,000**	**6,650,000**	
Remaining Financing Gap[8] (PSTA-II)	**161,887,775**		
o/w Private Sector	55,000,000		

Notes: [1]The PSTA-II ends in FY 2012. Figures for FY 2012 reflects the GoR's MTEF.

[2]Figures are the GoR's budget for "Fight Against Malnutrition." Total cost of NSEM is estimated to be $25.4 million, but annual NSEM budget is still TBD.

[3]FY 2012 is the CBJ request.

[4]Figures come from USADF's FY 2012 CBJ and include non-appropriated donated funds.

[5]Figures come from the revised ASIP, excluding USAID support to the LWH project.

[6]Estimate reflects additional commitments from EC, IFAD, Japan, and GAFSP.

[7]Secured contributions from the private sector as reflectd in the revised ASIP.

[8]Calculated using revised ASIP and post-CAADP meeting donor commitments. Actual gap may be larger, as growth in GoR budget according to the MTEF is less than assumed in revised ASIP.

There is good reason to believe that the GOR will maintain its commitments to both raising agricultural productivity and reducing malnutrition beyond the expiration of these strategies.[67] Declining donor support beginning in FY 2012 is a reflection of several factors, including the common difficulties donors have in making future commitments. However, in an effort to reduce the transaction costs of foreign assistance, the GOR introduced a "division of labor" proposal in 2010 that seeks to limit the engagement of individual donors to just three sectors, which may result in certain donors exiting from the agriculture sector over time.

6. MANAGEMENT

Under the general direction of the U.S. Ambassador, the USAID Mission Director oversees all implementation of the FTF strategy in Rwanda. The Mission Director is directly supported by staff on both the Health and Economic Growth teams and collaborates closely with relevant agencies at post, including the State Department, Peace Corps, Centers for Disease Control (CDC), and Department of Defense.

[67] Discussion has already begun about PSTA-III in the context of the agriculture SWAp committee.

Rwanda is one of several countries in East and Southern Africa covered by USDA's office in Nairobi. The Embassy and USAID assist USDA with oversight of the programs it supports in Rwanda and seek to facilitate policy dialogue between the GOR and USDA on matters of mutual interest, such as the exploration of alternatives to USDA-supported commodity-import programs, currently the approach used for the McGovern-Dole school feeding program, which might simultaneously help the GOR meet its agricultural productivity and social objectives in the areas of health and education. Given USDA's expertise in the area of agricultural research and its established links to U.S. land grant universities, collaboration with USDA will greatly enhance the design and management of the agricultural research capacity building program described above.

7. ANNEX

7.1 ANNEX A: MAPPING FTF INVESTMENTS TO PROGRAM ELEMENTS AND STRATEGY IRS

Core Investment Area / Program			Program Element(s)	Intermediate Result(s)
Systems Transformation				
	Sustainable Market Linkages			
		Privatization of Rwanda's Fertilizer Import and Distribution System	4.5.2 Agricultural Sector Capacity	Improved agricultural productivity
				Increased access to rural finance
		Beans/Maize Value Chain Development	4.5.2 Agricultural Sector Capacity	Improved agricultural productivity
				Improved access to markets
		Dairy Value Chain Development	4.5.2 Agricultural Sector Capacity	Improved agricultural productivity
				Improved access to markets
		Coffee/Pyrethrum Value Chain Development	4.5.2 Agricultural Sector Capacity	Improved agricultural productivity
				Improved access to markets
		Development Credit Authority	4.6.2 Private Sector Capacity	Increased access to rural finance
		Access to Finance Rwanda	4.5.2 Agricultural Sector Capacity	Increased access to rural finance
		Integrated Improved Livelihoods Program	4.7.3 Strengthen Microenterprise Productivity	Improved agricultural productivity
				Increased access to rural finance
	Infrastructure			
		Rwanda Rural Feeder Roads Improvement Program	4.4.3 Transport Services	Improved access to markets
		Land Husbandry, Water Harvesting & Hillside Irrigation Project	4.5.2 Agricultural Sector Capacity	Improved agricultural productivity
				Improved mgmt. of selected ecosystems
		Rwanda Integrated Water Security Program	4.5.2 Agricultural Sector Capacity	Improved agricultural productivity
				Improved mgmt. of selected ecosystems
		ICT for Agriculture	4.5.2 Agricultural Sector Capacity	Improved agricultural productivity
				Improved access to markets
	Nutrition			
		Support to Sustainable Market Linkages	3.1.9 Nutrition	Health and social welfare promoted
		Other Support to NSEM	3.1.9 Nutrition	Health service delivery improved
Innovation				
		Research Capacity Building Program	4.5.2 Agricultural Sector Capacity	Improved agricultural productivity
			3.2.2 Higher Education	
Policy				
		Sector Program Assistance	4.5.1 Agricultural Enabling Environment	Cross-cutting
		Famine Early Warning System	4.5.2 Agricultural Sector Capacity	Cross-cutting
		Agriculture Sector Capacity Building Program (PFM, M&E, etc.)	4.5.1 Agricultural Enabling Environment	Cross-cutting