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PROJECT APPRAISAL DOCUMENT
ON A
PROPOSED CREDIT
IN THE AMOUNT OF SDR 21.4 MILLION
(US\$34 MILLION EQUIVALENT)
TO THE
REPUBLIC OF RWANDA
FOR A
LAND HUSBANDRY, WATER HARVESTING AND HILLSIDE IRRIGATION PROJECT

November 23, 2009

Agriculture and Rural Development Unit
Sustainable Development Department
East Africa Country Cluster II
Africa Region

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CURRENCY EQUIVALENTS

(Exchange Rate Effective October 31, 2009)

Currency Unit = Rwanda Franc (RWF)

569.5 = US\$1

SDR 1 = US\$1.58989

FISCAL YEAR

July 1 – June 30

ABBREVIATIONS AND ACRONYMS

AfDB	African Development Bank
AFR	Access to Finance Rwanda
AFTAR	Agriculture and Rural Development Unit, Africa Region
AMIR	Association of Micro finance Institutions in Rwanda
ASWG	Agriculture Sector Working Group
BNR	<i>Banque Nationale du Rwanda</i> (National Bank of Rwanda)
CAS	Country Assistance Strategy
CBO	Community Based Organization
CCPIG	Common Commodity Production Interest Groups
CFE	Common Framework for Engagement
CIDA	Canadian International Development Agency
CLG	Company Limited by Guarantee
CNF	<i>Conseil National de Femmes</i> (National Women's Council)
CPIP	Country Procurement Issues Paper
DA	Designated Account
DFID	Department for International Development
DIF	Dynamic Information Framework
DPs	Development Partners
DRC	Democratic Republic of Congo
EA	Environmental Assessment
EDPRS	Economic Development and Poverty Reduction Strategy
EFA	Economic and Financial Analysis
EIA	Environmental Impact Assessment
EMP	Environmental Management Plan
EOI	Expression of Interest
ERR	Economic Rate of Return
ESMF	Environmental and Social Management Framework
EU	European Union
FDLR	<i>Front Démocratique pour la Libération du Rwanda</i>
FM	Financial Management
FMM	Financial Management Manual

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FMS	Financial Management Specialist
GEF	Global Environment Facility
GoR	Government of Rwanda
GIS	Geographic Information System
GPN	General Procurement Notice
GPS	Global Positioning System
IBRD	International Bank for Reconstruction and Development
ICT	Information and Communication Technology
IDA	International Development Association
IFAD	International Fund for Agricultural Development
IFC	International Finance Corporation
IFR	Interim Financial Report
IP	Implementation Progress
IPM	Integrated Pest Management
IPSAS	International Public Sector Accounting Standards
ISR	Implementation Status and Results Report
JICA	Japanese International Cooperation Agency
LSG	Land Husbandry Self-help Groups
LWH	Land Husbandry, Water Harvesting and Hillside Irrigation
M&E	Monitoring and Evaluation
MDG	Millennium Development Goals
MFI	Micro Finance Institution
MINAGRI	Ministry of Agriculture and Animal Resources
MINALOC	Ministry of Local Administration, Good Governance, Community Development, and Social Affairs
MINECOFIN	Ministry of Finance and Economic Planning
MINIRENA	Ministry of Natural Resources
MIS	Management Information System
MoU	Memorandum of Understanding
MT	Metric Ton
MTEF	Medium Term Expenditure Framework
NEB	National Export Development Board
NEPAD	New Partnership for Africa's Development
NERP	National Electricity Rollout Program
NGO	Non-Governmental Organization
NRM	Natural Resources Management
NTB	National Tender Board
OAG	Office of the Auditor General
OECD	Organization for Economic Cooperation and Development
PAD	Project Appraisal Document
PAPSTA	Support Project for the Agricultural Transformation Strategic Plan
PCM	Project Contract Manager
PCN	Project Concept Note
PDO	Project Development Objective
PER	Public Expenditure Review
PFI	Participating Financial Institution

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PFM	Public Financial Management
PIC	Public Information Center
PID	Project Information Document
PIM	Project Implementation Manual
PIU	Project Implementation Unit
PM	Program Manager
PPF	Project Preparation Facility
PRSP	Poverty Reduction Strategy Program
PSCBP	Public Sector Capacity Building Project
PSTA	<i>Plan Stratégique pour la Transformation Agricole</i> (Strategic Plan for Agricultural Transformation)
QER	Quality Enhancement Review
RAB	Rwanda Agricultural Board
RADA	Rwanda Agricultural Development Authority
RAP	Resettlement Action Plan
RCA	Rwanda Cooperatives Agency
REMA	Rwanda Environmental Management Authority
RF	Results Framework
RHESI	Rwanda Horticulture Exports Standards Initiative
RHODA	Rwanda Horticulture Development Agency
RIF	Rural Investment Facility
RPF	Resettlement Policy Framework
RPPA	Rwanda Public Procurement Authority
RSSP	Rural Sector Support Program
SIL	Specific Investment Loan
SLM	Sustainable Land Management
SPAT	Strategic Plan for Agricultural Transformation
SWAp	Sector Wide Approach
SWAT	Soil and Water Assessment Tool
TOR	Terms Of Reference
UNCDF	United Nations Capital Development Fund
UNDP	United Nations Development Program
USAID	United States Agency for International Development
WTO	World Trade Organization
WUA	Water Users' Association

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REPUBLIC OF RWANDA
Land Husbandry, Water Harvesting and Hillside Irrigation Project

CONTENTS

	Page
I. STRATEGIC CONTEXT AND RATIONALE	1
A. Country and Sector Issues.....	1
B. Rationale for Bank Involvement.....	4
C. Higher Level Objectives to which the Project Contributes	5
II. PROJECT DESCRIPTION	6
A. Lending Instrument.....	6
B. Project Development Objective and Key Indicators.....	7
C. Project Components.....	7
D. Lessons Learned and Reflected in the Project Design.....	15
E. Alternatives Considered and Reasons for Rejection.....	17
III. IMPLEMENTATION	18
A. Partnership Arrangements.....	18
B. Institutional and Implementation Arrangements	19
C. Monitoring and Evaluation of Outcomes/Results.....	21
D. Sustainability.....	23
E. Critical Risks and Possible Controversial Aspects	25
F. Loan/Credit Conditions and Covenants	28
IV. APPRAISAL SUMMARY	29
A. Economic and Financial Analysis.....	29
B. Technical.....	30
C. Fiduciary	31
D. Social.....	32
E. Environment.....	33
F. Safeguard Policies.....	33
G. Policy Exceptions and Readiness.....	37
Annex 1: Country and Sector or Program Background	38
Annex 2: Major Related Projects Financed by the Bank and/or other Agencies	44
Annex 3: Results Framework and Monitoring	47
Annex 4: Detailed Project Description.....	54

Annex 6: Implementation Arrangements	74
Annex 7: Financial Management and Disbursement Arrangements.....	81
Annex 8: Procurement Arrangements	94
Annex 9: Economic and Financial Analysis	108
Annex 10: Safeguard Policy Issues.....	121
Annex 11: Project Preparation and Supervision	131
Annex 12: Documents in the Project File	133
Annex 13: LWH Program: A Common Framework for Engagement	135
Annex 14: Letter of Sector Policy.....	136
Annex 15: Statement of Loans and Credits.....	138
Annex 16: Country at a Glance	139
Annex 17: Map	141

REPUBLIC OF RWANDA
 LAND HUSBANDRY, WATER HARVESTING AND HILLSIDE IRRIGATION PROJECT
 PROJECT APPRAISAL DOCUMENT
 AFRICA
 AFTAR

Date: November 23, 2009	Team Leader: Loraine Ronchi
Country Director: Johannes C.M. Zutt	Sectors: General agriculture, fishing and forestry sector (55%); Irrigation and drainage (45%)
Sector Manager/Director: Karen Mcconnell Brooks/Inger Andersen	Themes: Rural services and infrastructure (67%); Other rural development (33%)
Project ID: P114931	Environmental category: Partial Assessment
Lending Instrument: Specific Investment Loan	

Project Financing Data

☐ Loan ☒ Credit ☐ Grant ☐ Guarantee ☐ Other:

For Loans/Credits/Others:
 Total Bank financing (US\$m.): 34.00
 Proposed terms: Standard IDA terms, with a maturity of 40 years, including a grace period of 10 years.

Financing Plan (US\$m)

Source	Local	Foreign	Total
BORROWER/RECIPIENT	7.33	0.00	7.33
International Development Association (IDA)	8.46	25.54	34.00
US: Agency for International Development (USAID)	0.00	1.50	1.50
Local Communities	2.24	0.00	2.24
Total:	18.03	27.04	45.07

Borrower:

Republic of Rwanda
 Rwanda

Responsible Agency:

Ministry of Agriculture and Animal Resources
 B.P. 621 Kigali
 Rwanda
 Tel: (250) 252-586104
 Fax: (250) 252 584644

Estimated disbursements (Bank FY/US\$m)									
FY	2010	2011	2012	2013	2014				
Annual	6.00	9.00	9.00	9.00	1.00				
Cumulative	6.00	15.00	24.00	33.00	34.00				
Project implementation period: Start December 21, 2009 End: June 30, 2014 Expected effectiveness date: May 1, 2010 Expected closing date: June 30, 2014									
Does the project depart from the CAS in content or other significant respects? [] Yes [X] No Ref. PAD I.C.									
Does the project require any exceptions from Bank policies? [] Yes [X] No Ref. PAD IV.G.									
Have these been approved by Bank management? [] Yes [] No									
Is approval for any policy exception sought from the Board? [] Yes [X] No									
Does the project include any critical risks rated "substantial" or "high"? [] Yes [X] No Ref. PAD III.E.									
Does the project meet the Regional criteria for readiness for implementation? [X] Yes [] No Ref. PAD IV.G.									
Project development objective Ref. PAD II.B., Technical Annex 3 The Project Development Objective (PDO) is to increase the productivity and commercialization of hillside agriculture in target areas.									
Project description [one-sentence summary of each component] Ref. PAD II.C, Technical Annex 4 The Project uses a modified watershed approach to introduce sustainable land husbandry measures for hillside agriculture on selected sites, as well as developing hillside irrigation for sub-sections of each site. The Project will have three components: Component A: Capacity Development and Institutional Strengthening for Hillside Intensification. This component aims to develop the capacity of individuals and institutions for improved hillside land husbandry, stronger agricultural value chains and expanded access to finance. Component B: Infrastructure for Hillside Intensification. This component will provide the essential 'hardware' for hillside intensification to accompany the capacity development and institutional strengthening activities of Component A. Component C: Implementation through the Ministerial SWAp Structure. This component aims to ensure that Project activities are effectively managed within the new SWAp structure for Ministerial implementation of programs and projects at MINAGRI.									
The project may have limited adverse environmental and social impacts, triggering: OP/BP 4.01 on Environmental Assessment; Natural Habitats (OP/BP 4.04); Pest Management (OP/BP 4.09); Physical Cultural Resources (OP/BP 4.11); Involuntary Resettlement (OP/BP 4.12); Forests (OP/BP 4.36); Safety of Dams (OP/BP 4.37) and Projects on International Waterways (OP/BP 7.50). The project is rated as environmental assessment category B.									

Significant, non-standard conditions, **if any**, for:

Ref. PAD III.F.

Loan/credit effectiveness:

1. Open separate, segregated designated accounts for IDA Credit and Trust Fund Grant in the National Bank of Rwanda denominated in US dollars, respectively; and open a 'Project' account in local currency along with a deposit equivalent to US\$62,500, being the first of the deposits referred to in Section V.A (b) of Schedule 2 of the Financing Agreement.
2. Recruit an accountant for LWH/Program 1 Implementation Team.
3. The Project Implementation Manual has been adopted by the Recipient in form and substance satisfactory to the Association.
4. The annual work plan and budget for the Project for the First Fiscal Year of Project implementation has been furnished by the Recipient to the Association for approval.

Covenants applicable to project implementation:

Financial Management implementation covenants

- (a) The Recipient shall, no later than three (3) months after the Effective Date, install adequate software for purposes of financial management under the Project; and,
- (b) The Recipient shall, no later than one (1) month after the Effective date, appoint, in accordance with the provisions of Schedule 2, Section III of the Financing Agreement, external financial auditors, with qualifications, experience, and terms of reference satisfactory to the Association.
- (c) The Recipient shall deposit into an account in Rwandan Francs, in a commercial bank acceptable to the Association, on a quarterly basis throughout Project implementation, an amount equivalent to \$62,500, or such other amount as agreed with the Association required to finance the Recipient's contribution for expenditures under the Project other than those financed from the proceeds of the Credit

Other Legal Covenants:

Retroactive Financing: Board approval is being sought for retroactive financing in an amount not to exceed \$1,000,000 equivalent for payments made prior to the legal agreement date but on or after November 1, 2009, for Eligible Expenditures

I. STRATEGIC CONTEXT AND RATIONALE

A. Country and Sector Issues

1. **Both the economic growth and the poverty-reduction objectives for Rwanda rely critically on agricultural growth.** Rwanda appears to have fully exhausted the growth effects of its post-conflict reconstruction. Rwanda's recent CAS (FY09-FY12), thus highlights the need to activate new drivers to sustain rapid and inclusive growth, raise incomes and reduce income poverty. Agriculture is identified by the Government as one of the key sectors in both its poverty reduction strategy, the EDPRS,¹ and in its longer-term Vision 2020 document. Indeed, the improved performance in GDP growth seen in 2008 (8.5 percent) has largely been credited to strong agriculture growth that year (14.8 percent). This is because of the sector's size and its important backward and forward linkages.² Despite the country's potential for growth, at the present time, Rwanda remains one of the world's poorest countries, with an average annual income of US\$320 per capita. More than one-third of all Rwandans live in extreme poverty (defined as earning less than RWF175 per day, the level of income needed to support daily food consumption of 2,500 KCal),³ and more than one-half live in moderate poverty (defined as earning less than RWF250 per day). Poverty remains largely a rural—and agricultural—phenomenon with rural poverty at 67 percent. It is, therefore, not only the *growth* agenda, but also the country's MDG on *poverty* which depend critically on improving agricultural productivity, given that 80 percent of the country's labor force is engaged in agriculture. For these reasons, the EDPRS and the CAS place particular emphasis on the importance of achieving higher productivity for agriculture.

2. **Agriculture is the backbone of Rwanda's economy, accounting for about 39 percent of GDP, 80 percent of employment, and 63 percent of foreign exchange earnings.** It also provides 90 percent of the country's food needs. Total arable land in Rwanda is slightly above 1.5 million ha, 90 percent of which is found on hillsides. The sector faces several challenges: (i) a binding land constraint that rules out extensification (bringing more and more land under cultivation); (ii) small average land holdings (0.4 ha); (iii) poor water management (uneven rainfall and ensuing variability in production) resulting from very low levels of irrigation (15,000 ha in the whole country); (iv) the need for greater (public and private) capacity from the district to the national levels and the lack of extension services for farmers; and (v) limited commercial orientation constrained by poor access to output and financial markets. Without the option of extensification, agricultural intensification must take place in the context of a potentially fertile, but challenging, physical environment. Steep terrains and the highest population density in sub-Saharan Africa (355 inhabitants per km²) make good land husbandry a strict necessity (to curtail erosion and otherwise maintain the quality of the soil), as well as an environmental prerogative. Arable land on hillsides constitutes the vast majority of the total agricultural land in the country, but erosion costs the country 1.4 million tons of fertile soils per year. Given its high dependence

¹ Economic Development and Poverty Reduction Strategy, Rwanda's PRSP.

² Recent analytical work (World Bank, 2007 - *Promoting Pro-Poor Agricultural Growth in Rwanda: Challenges and Opportunities*. Agricultural Policy Note) confirms that improvements in sector productivity could deliver growth of about 6 percent annually through 2015, which could fuel average annual GDP growth of 6.24 percent from agriculture alone.

³ Enquête Intégrale sur les Conditions de Vie des Ménages au Rwanda (EICV), 2005-06.

on rain fed agriculture, irrigation is critical to reducing the sector's vulnerability to climatic variation and to aligning the right incentives for intensification.

3. **The Government has formulated a coherent strategy for the sector**, the Strategic Plan for Agricultural Transformation (SPAT), recently updated as the SPAT II. The SPATs are fully aligned with the EDPRS and Vision 2020. Rwanda's agricultural strategy, as developed by the Ministry of Agriculture and Animal Resources (MINAGRI) is aligned around four strategic programs: (i) Physical resources and food production: intensification and development of sustainable production systems; (ii) Producer organization and extension: support to the professionalization of producers; (iii) Entrepreneurship and market linkages: promotion of commodity chains and the development of agribusiness; and (iv) Institutional development: strengthening the public sector and regulatory framework for agriculture.

4. **MINAGRI and Development Partners (DPs) signed a Memorandum of Understanding establishing a Sector Wide Approach (SWAp)** in the agriculture sector in December 2008, in accordance with the Paris declaration on aid effectiveness and the Accra Agenda for Action. The SWAp is built on a commitment from DPs to coordinate assistance around the SPAT with MINAGRI through the Agriculture Sector Working Group, co-chaired by the World Bank. As a result, SPAT II will be implemented through a 'SWAp Structure', phasing out stand alone project implementation units (PIUs). In the place of PIUs, MINAGRI's SWAp Structure (see Annex 6), will hire four Program Managers and implementation teams—one for each SPAT II program. Implementation of the SWAp structure is being supported by several development partners, most notably through support from IFAD, DFID and Belgium in the form of the Support Project for the Transformation of Agriculture in Rwanda (PAPSTA).

5. **The Government has developed solid legal and regulatory frameworks for land issues and for farmer organizations.** The 2005 Land Law secures the rights to tenure for all existing landholders, whether the hold is due to customary or written law. Implementation of titling has started, with DFID support, and is envisioned to be completed by 2012. The land law also covers land consolidation whereby private landholders share common crop and/or infrastructure uses. The Land Law clearly stipulates that land consolidation is voluntary and cannot be expropriatory. The government has also been promoting a policy to convert grass root farmer 'associations' into cooperatives, enabling them to enter into commercial activities, and for which an enhanced regulatory framework (the Cooperative Law) has been established. Nevertheless, these organizations remain very weak and in need of greater institutional support.

6. **The agricultural sector in Rwanda is constrained by a lack of institutional and technical capacity** at all levels, with obvious consequences for the Government's objectives for higher productivity and commercialized agriculture. In particular, the recent capacity assessment of MINAGRI indicated that the existing institutional and community-level capacity for hillside intensification and marketing is very low. Very few farmers are ready for modern, intensified irrigated agriculture that targets export crops or greater commercialization. Improved extension systems are, therefore, required to realize Rwanda's ambitious development objectives for the agriculture sector. Currently, farmer access to extension services is limited, with a ratio of extension agents to farmers as low as 13,000. The Government, however, has recently put into place a coherent extension strategy and has laid down guiding principles that will help extension play its part in achieving the sector's growth and development objectives.

7. **A number of key parallel activities concerning rural infrastructure** are critical to meeting the agricultural sector's objectives. The Government of Rwanda is leading a nationwide initiative to extend access to electricity. It is assisted in this by a Bank-supported operation on Electricity Access Scale-Up, which will help trigger the launch of the national electricity rollout program (NERP). In transport, financing for rural roads, particularly feeder roads, is needed to support rural development. To this end, the current CAS for Rwanda has earmarked USD25 million for a rural roads operation, which, similar to the coordination with the Bank's energy operations, should be undertaken in close coordination with the Bank's other programs and overall Government priorities (e.g. agricultural growth).

8. **Finally, access to finance remains one of the central constraints on growth in the sector.** While much has been accomplished in terms of laying the groundwork for financial broadening and deepening in Rwanda through recent financial sector reforms, the challenges to rural access to finance remain daunting.⁴ While agriculture is hugely important to GDP and employment, it constituted just 5.4 percent of credit to the economy in 2007. The obstacles to rural finance can be grouped into three clusters: (i) inappropriate and inadequate range of products offered to rural clients; (ii) perceived high risks in primary agricultural production; and (iii) very poor financial literacy resulting in a lack of linkages by producers and their organizations with agribusinesses and financial institutions. In order to address this critical constraint to agricultural growth and poverty alleviation in Rwanda, many disparate initiatives are undertaken across sectors (e.g. financial sector and agriculture) by numerous DPs and Government.

The Government's LWH Program

9. **To address the critical agenda of hillside intensification, the Government designed and developed a Land Husbandry, Water Harvesting and Hillside Irrigation (LWH) Program** under Program 1 of its SPAT II. In March 2008, MINAGRI presented the LWH Program, including a detailed site-level technical proposal, to DPs in the Agriculture Sector Working Group (ASWG). The LWH Program, as conceived by Government, is a two-phased program to implement improved land-husbandry and increased productivity in 101 pilot watersheds covering 30,250 ha of land. The first phase is to cover the development of 32 sites, permitting a learning process before the second phase, which would see the completion of the program through the remaining 69 sites. The Government's overall program envisions some 12,000 ha of the 30,250 ha total to be irrigated. The current World Bank LWH Project will finance a smaller number of preliminary LWH sites in support of the Government's Program. It is expected that a number of other DPs will each finance a slice of the overall program, which therefore calls for strong programmatic guidance by the Government to ensure coherence, complementarities and adherence to a common approach, including safeguards. The Government has, therefore, expressed its desire to have key development partners help in formulating a Common Framework of Engagement (CFE) for investments in LWH. Such a framework includes technical specifications, economic and financial analysis (EFA) guidelines, a safeguards

⁴ An extensive access to finance survey of Rwanda completed in 2008 by FinScope, supported by the UK's Department for International Development (DFID) confirms the rural urban disparity in access to finance and the very low levels of financial inclusion among rural households.

framework, common approaches to community engagement, and common socio-technical site and crop selection criteria. Working with key partners, the present World Bank-funded Project assists the Government in the formulation of that framework throughout Project implementation. That is, the full CFE is a work-in-progress, to be informed and finalized with the experience of Government through the Bank-financed LWH Project. To date, common selection criteria, common EFA methodology, common environmental guidelines, common resettlement policy framework and common dam safety guidelines have been developed with Government and used in Project preparation (see Annex 13 for an outline of the CFE).

B. Rationale for Bank Involvement

10. **The LWH project provides the opportunity to address some of the fundamental constraints to agricultural growth in Rwanda**, listed above. As such, it has the potential to be truly transformational in its scope. The rationale for bank involvement in the proposed project is underpinned by: (a) the Bank's own strong experience and expertise in agricultural intensification (within and outside Rwanda) and in successful watershed management approach to hillside rehabilitation; (b) a strong commitment and ownership of the Rwandan authorities of the project; and (c) the specific request from the Government for Bank support, given the Bank's role as lead donor of the ASWG.

World Bank Experience in Intensification

11. **World Bank experience in both Africa and Asia can fruitfully be brought to bear on the LWH.** At the most basic level, the observation that Rwanda's population density is akin to that of some parts of Asia, where a much higher proportion of land is irrigated, supports the strategic relevance of LWH from the Bank's own global experience. On the side of land husbandry and watershed rehabilitation, the lessons learned from the Bank's experience in partnering with different Governments are key. For example, the Bank's experience in collaborating with the Government of China on the rehabilitation of the Loess Plateau holds important lessons for a holistic watershed approach.⁵ Closer to home, in Rwanda the Bank has enjoyed substantial success in increasing yields with intensification efforts in marshlands through the first phase of the Rural Sector Support APL (RSSP 1). This experience provides the team with very Rwanda-specific knowledge on success factors in promoting intensification, including: addressing capacity constraints through 'lead farmers', addressing issues in land management, management of productivity investments under the Government's decentralization agenda, and support to farmer organizations in the Rwandan context. Most recently, the incipient use of water user associations (WUAs) in RSSP2, a very new phenomenon in Rwanda, can provide the LWH with valuable experience for its own WUA formation.

Government Ownership

12. **The Bank's in-house expertise and experience is best viewed as a support to what is really a detailed Government-formulated program**, which the Government considers a key

⁵ The first exchange on Loess actually took place between China and high level authorities in Rwanda who visited the Loess Plateau even before the recent Sino-Africa South-South exchanges facilitated by the World Bank.

instrument for the implementation of the SPAT II. In 2006, MINAGRI funded an experimental program on Water Harvesting and Hillside Irrigation, contracting ICRAF to oversee the technical aspects. After two years of rain water harvesting, land husbandry and hillside irrigation pilots, aimed at promoting horticultural production in four districts, MINAGRI commissioned the technical design of a large-scale investment program (the LWH Program). A number of lessons have emerged from the experimental process, including: (1) a strong demonstration effect on the profitability and productivity potential of hillside irrigation and better hillside land management in the household level pilots; (2) the need for larger scale, community-based approaches rather than household level interventions (consistent with the Government's strategy for land consolidation and community-driven development in agriculture); and (3) need for strong farmer mobilization, education and support, alongside 'hard' infrastructure investments.

World Bank and Partnerships

13. When MINAGRI presented the LWH Program to development partners in the Agriculture Sector Working Group, the World Bank undertook a technical review⁶ of selected aspects of the LWH and found it addresses the key agricultural growth constraints in Rwanda. The Government of Rwanda then specifically requested the Bank's financial and technical support to the LWH. The Bank's involvement is expected to leverage its catalytic role with other partners in the ASWG, both by its expertise and as a financier. Indeed, following the Bank's preliminary review findings for the LWH, both the Canadian and Japanese Governments expressed interest in supporting the Government's LWH Program. USAID has since followed suit. With its environmental and social safeguards management framework, the Bank has a strong stewardship and catalyst role for parallel and co-financiers that could not be met through other sources of funding. Furthermore, in the wake of the recent signing of the agricultural sector SWAp, the World Bank is in the key position to demonstrate for other development partners, a model of SWAp-supportive implementation that does not resort to the creation of new and separate PIUs.

C. Higher Level Objectives to which the Project Contributes

14. **Rwanda's first Poverty Reduction Strategy Program (PRSP 2002-2006) laid the foundation for sustainable peace in the wake of the 1994 genocide** by helping to create a framework that enabled rapid progress towards critical reconstruction. The first PRSP achieved substantial progress in many areas, but the lower-than-targeted growth outcome in the agriculture sector was seen to be an important factor slowing the rate of poverty reduction. The poor performance in agriculture was attributable in large part to the continued widespread use by rural households of traditional farming methods, with limited uptake of improved production technologies and modern inputs.

15. **Rwanda's second PRSP, the Economic Development and Poverty Reduction Strategy (EDPRS), refocuses the country priority on growth** and advocates an approach focused on decentralization and increased private sector involvement in order to move from reconstruction, to growth and poverty reduction. The priorities of the EDPRS are embodied in

⁶ The review was undertaken on the Government's original LWH Program Proposal Document, available from MINAGRI.

three flagship programs: (i) Sustainable Growth for Jobs and Exports; (ii) Vision 2020 *Umurenge*; and (iii) Governance. Under the first flagship, the goal is to improve productivity and promote innovation. Given the importance of agriculture for growth and poverty reduction, *‘raising agricultural productivity and value addition while ensuring food security’* is a key priority of the EDPRS. As the Government’s main rural development program for directly addressing this priority, LWH will make a vital contribution to the growth and poverty reduction agenda.

16. The LWH is aligned with the proposed outcomes, indicators and policy actions agreed in the EDPRS policy and results matrix. The LWH addresses the call for economic transformation to create employment and generate exports. It is the main vehicle for the EDPRS call for “increased agricultural productivity” on hillsides, where the majority of Rwanda’s arable land is to be found. As such, it shares the outcomes and indicators found in the country’s higher level strategic documents.

17. The proposed project is explicitly identified in the current CAS for Rwanda (2009-2012), which focuses Bank engagement in support of Rwanda’s EDPRS. The project will also provide an effective means to advance implementation of the Government-led sector-wide approach (SWAp) in the sector and its ongoing harmonization process, as per clear higher-order Government objectives for aid effectiveness.

II. PROJECT DESCRIPTION

A. Lending Instrument

18. The LWH Project is a SIL. To honor the Bank’s commitment to agriculture’s sector-wide approach in Rwanda, however, the Project will not create a new PIU. Instead, it will be managed using the new (MINAGRI-defined) ‘SWAp structure’ of implementation. The agricultural sector SWAp in Rwanda is above all a coordinating mechanism that puts the Government in the driver’s seat of its own strategy’s implementation. According to the SWAp MoU, signed between Government and DPs, the term ‘SWAp’ is intended to mean three things: (i) a commitment to donor harmonization around the SPAT II; (ii) the building of implementation capacity in the Ministry, without the creation of new PIUs; and (iii) a funding modality. While the Project does not use a SWAp funding modality (it is a SIL), it does support the SWAp in aspects (i) and (ii), while mitigating the implementation risks inherent in the nascent stage of the agricultural SWAp. It is important to note that the Government acknowledges these risks and requested the Bank’s support in this form. As a result, the Project will be the first DP support offered through the new SWAp implementation structure (see Annex 6), rather than through the creation of a new PIU. This is an important function of the Bank as Lead DP. MINAGRI’s implementation structure for Program 1 will form the implementation framework of the Project, while the Bank supports procurement and financial management functions both at central and decentralized levels in implementation through a SIL. Such support would build the capacity of the Program 1 SWAp Team to eventually implement all of its own activities, as per the sector’s objectives.

B. Project Development Objective and Key Indicators

Project Development Objective

19. The Project Development Objective (PDO) is to ***increase the productivity and commercialization of hillside agriculture in target areas***. This PDO, and the key performance indicators below, were developed together with Government and development partners as part of the CFE for the Government's LWH Program (see Annex 13 for an outline of the CFE) and are the same objectives and indicators to be shared with all financiers for the entire LWH Program. Baselines for these indicators have been collected (see Annex 3) which indicates which ones conform to routinely collected indicators data by Government.

Key Performance Indicators

20. Key performance indicators are presented in Annex 3 and include the following three PDO level indicators:

PDO Indicator 1: Increase in productivity of targeted irrigated command area (\$/ha)

PDO Indicator 2: Increase in productivity of targeted non-irrigated hillsides (\$/ha)

PDO Indicator 3: Increase in share of commercialized products from target areas (%)

C. Project Components

21. **The LWH Project uses a modified watershed approach to introduce sustainable land husbandry measures for hillside agriculture on selected sites, as well as developing hillside irrigation for sub-sections of each site.** The Project envisions the production of high-valued horticultural crops with the strongest marketing potential (with particular focus on organics) on irrigated portions of hillsides, and the improved productivity and commercialization of rainfed crops on the rest (the majority) of the site catchment-area hillsides. The LWH represents a transformation of hillside-intensification with a view to increasing productivity in an environmentally sustainable manner. As with all transformation, it requires high levels of participation and ownership by women and men in the project areas. As such, throughout the project description below, the Project will use participatory land-use processes to promote high stakeholder involvement and buy-in, and to empower women and men in the community for comprehensive land management work. The LWH Project has two components aimed at (A) developing the human and organizational capacity and (B) the required physical infrastructure for hillside intensification and transformation, as well as a third component (C) for SWAp project implementation and management.

Component A: Capacity Development and Institutional Strengthening for Hillside Intensification - US\$13.85 million (US\$12.12 million IDA, US\$1.50 million USAID, US\$0.12 million GoR, US\$0.11 million beneficiaries)

22. The objective of Component A is to develop the capacity of individuals and institutions for improved hillside land husbandry, stronger agricultural value chains and expanded access to finance. Using a value chain approach to the Project's PDO, Component A covers the capacity development and institutional strengthening for both production and marketing, including the access to finance issues that can constrain both. Component A includes four sub-components: A1 Strengthening Farmer Organizations; A2 Extension; A3 Marketing and Finance; and A4 Capacity Development and Institutional Strengthening: MINAGRI and its Agencies. This component will finance technical assistance, training workshops and meetings, surveys and studies, works related to post-harvest infrastructure, and goods.

Sub-component A1: Strengthening Farmer Organizations

23. **The success of the Government's hillside intensification objectives largely hinges on strong ownership and engagement of farmers in production and marketing activities**, particularly given the nature of decentralization in Rwanda. This requires solid farmer-based institutions at the local, provincial and national levels. Sustained provision of adequate technology and technical advice will require both supply push (in terms of good extension services—see sub-component A2 below) and demand pull for those services, which can only come from well managed farmers' organizations, particularly at the local level. In marketing and other commercial activities, crop specific or provincial and national level (apex) organizations also have an important role to play. Such a role—and the implications for support and training—has been carefully assessed and budgeted using a PPF-financed diagnostic on farmer organizations in order to ensure the Project's successful support of these aspects.

24. **The Project will strengthen farmer organizations and cooperatives for sustainable hillside intensification and marketing** by addressing three areas identified by the LWH institutional diagnostic as critical weakness: (i) governance; (ii) management; and (iii) market orientation. Governance in Rwandan farmer organizations concerns primarily the ability of members to assert their rights and responsibilities in the affairs of their organization. The Project will support the introduction of effective mechanisms to ensure that women and men of the cooperatives are educated on their roles in the decision making process. Where *creation* of organizations is necessary for LWH,⁷ support for such—including early mobilization and communication efforts—would be designed so as to foster much needed ownership by female and male grassroots members. Second, the Project will build capacity for sound organizational management of participating farmer organizations. At the provincial or national level, the Project will support a better articulation of apex institutional frameworks and service provision (particularly of market information and commodity marketing functions). Finally, the diagnosis on farmer organizations indicates that grassroots activity in marketing is weak. The Project will finance activities that foster grassroots awareness and competence for market integration.

⁷ Early in Project implementation, farmers will, on a number of sites, need to be mobilized and assisted to formulate Land-husbandry Self-Help Groups (LSGs), Common Commodity Production Interest Groups (CCPIGs) and Water User Associations (WUAs).

Sub-Component A2: Extension

25. **The demand for extension services under the LWH is considerable.** The LWH project calls for a holistic approach to watershed management, involving technical and technological challenges in sustainable land husbandry for rainfed and irrigated agriculture alike. For commercialization, it also involves knowledge and understanding of phytosanitary issues and will call for very specialized and intensive horticultural technical assistance. Several actors are involved in the delivery of extension services, including MINAGRI and its specialized agencies, decentralized local administration, farmers' organizations, NGOs, the private sector, agricultural education institutions, and agricultural research institutes. While the seven guiding principles of the Government's sound extension strategy⁸ are entirely in the right direction, to translate them into operationally meaningful actions will require addressing many of the weaknesses and threats (see Table 3 in Annex 4).

26. **As part of Project preparation, the Government has launched a PPF-financed consultancy to formulate the design for an extension strategy for the LWH.** In identifying the shortfalls of existing extension services for the LWH, the preliminary report places a strong emphasis on the need to: (i) actively support the development of the demand side of extension services through sensitization and intensive communication to targeted farmers and the empowerment of their grass-root institutions; (ii) improve the supply side of extension delivery by building a well established coordination framework that links farmers, decentralized technical entities and other non government actors vertically up to the LWH/Program 1 Implementation Team at MINAGRI, as well as horizontal coordination with other stakeholders such as private input suppliers and NGOs; and (iii) develop extension themes and materials focusing on (a) land-husbandry practices in sub-watershed setting; (b) downstream reservoir protection and development support; and (c) water harvesting and water conveyance (see Annex 4).

27. **The Project will finance activities to address the key extension issues most critical to the success of LWH objectives.** In particular, the Project will finance the implementation arrangements necessary for an extension delivery system that incorporates the key observations of the diagnostic conducted for the LWH: (i) setting up a common framework for "participatory extension"; (ii) defining a clear organizational mechanism by which periodic interactions (face to face and mass communication) are planned and held between farmers and extension agents; and (iii) defining approaches for evaluation and validation of results following adoption of new technologies and practices. This sub-component will finance additional human resources, mobility, training, communication and sensitization campaigns, and equipments as necessary. As per the findings of the horticultural marketing study undertaken for the LWH⁹, the Project will also finance extension activities related to pest disease monitoring, identification and reporting,

⁸ Seven principles: (i) participatory extension; (ii) commodity chain approach at the community, district, and national levels; (iii) farmers participation in diagnosis, solution identification, and technology experimentation; (iv) voluntary farmer extension officers; (v) establishing rural innovation community centers; (vi) organization of agricultural competition; and (vii) progressive disengagement from extension service in favor of private extension delivery.

⁹ *Study on the Marketing, Post Harvest, and Trade Opportunities for Fruit and Vegetables in Rwanda* (2009) financed by the EU/All ACP Countries and led by the World Bank.

as well as Good Agricultural Practices (GAP), essential for external Global GAP certification for horticultural export. In addition to the extension activities described, very specialized and intensive hands-on technical assistance for horticultural products of the irrigated command area will be necessary for horticultural cultivation under the LWH.

Sub-component A3: Marketing and Finance

28. **Marketing.** The Project will use a value chain approach based on viable market demand to support horticultural sector development. Basic prerequisites to successful horticulture development include the existence of solvent markets (i.e. market demand), an adequate post harvest infrastructure to minimize post harvest losses, and favorable market access conditions. A specialized study (see footnote 9) was commissioned to identify crops that not only meet the appropriate agronomic conditions for cultivation (which were well articulated in the Government's original proposal), but also that have viable markets (see Figure 3 in Annex 4). The study also identifies the critical factors and constraints for success in growing, post-harvest management and marketing of those crops, and identified which investments are critical. The key constraints to realizing Rwanda's substantial potential in selected horticultural sub-sectors include: Linkages between buyers and sellers, quality, post-harvest infrastructure (including rural access roads), and external certification.

29. **The Project will meet the key constraints to successful horticultural development through a variety of investments and active linkages with other operations.** The Project will finance the following activities (see Annex 4 for greater detail): (i) fostering linkages among entrepreneurs and smallholder organizations; (ii) providing supplementary intensive quality technical assistance and external certification; and (iii) building the required post harvest infrastructure to ensure the proper handling of the produce and exploitation of processing potential. Sub-component A4 will support the necessary enabling regulatory environment for horticultural marketing and export (e.g. phytosanitary). For other critical complementary issues of (a) electrification and (b) rural access roads, the Project will actively link with ongoing operations and investments in the country. In particular, agreement has already been reached with the World Bank Electricity Access Scale-Up operation for electrification of sectors in which the LWH sites selected for development will operate. Discussions have started with the World Bank Rural Roads (FY10 pipeline) operation for similar coordination. Outside the Bank, the Project Team is actively in discussion with USAID on their nascent feeder roads investment to explore the possibility of coordinating investments.

30. **Rural Finance. Access to finance in Rwanda is low, particularly for rural women and men.** A recent DFID-financed financial access survey (see footnote 4) shows that Rwanda is characterized by a high level of financial exclusion. Little over 50 percent of Rwandan adults have access to any form of financial services and only 14 percent of the adult population is banked. These figures are worse for rural women and men, than for urban. The results of the survey have prompted DFID and the Government to recently propose a financial access trust to better focus and coordinate Government and DP financial access initiatives through a company limited by guarantee (CLG) model, the Access to Finance Rwanda (AFR) initiative. Even beyond basic access, in terms of investment finance, a number of further obstacles exist. The most pertinent constraints facing rural entrepreneurs in the financial sector include: An inadequate range of products offered to rural female and male clients; real and perceived high

risks in primary agricultural production that spills over to other activities along the chain; and insufficient capacity and linkages by producer organizations with agribusinesses and financial institutions.

31. The Project will finance investments in improving rural access to financial services (including savings, credit and insurance) on a sustainable basis. The Project will address the key constraints to rural access to finance through three clusters of activities. Project activities include: (i) product development in savings, leasing, value chain financing products (including the exploration of warehouse receipting), and index-based weather insurance; and (iii) capacity building and linkages for rural women and men (financial literacy), their organizations and farmer associations and rural financial service providers such as microfinance institutions (MFIs); and (iii) promoting sustainable rural financial services through financial support of the Access to Finance Rwanda initiative. All capacity building measures will be offered strictly on a demand basis. The demand driven process will be gender sensitive ensuring that the needs of women clients are well articulated, alongside those of men. While costs of public goods and promotional activities will be fully funded under the Project, technical training will be offered on a cost-sharing basis. Commercial banks and MFIs will make higher relative contributions than small rural-based producer groups, and those initiatives geared at financial literacy will be fully funded under the Project. See Annex 4 for a fuller articulation of the Project's rural finance activities.

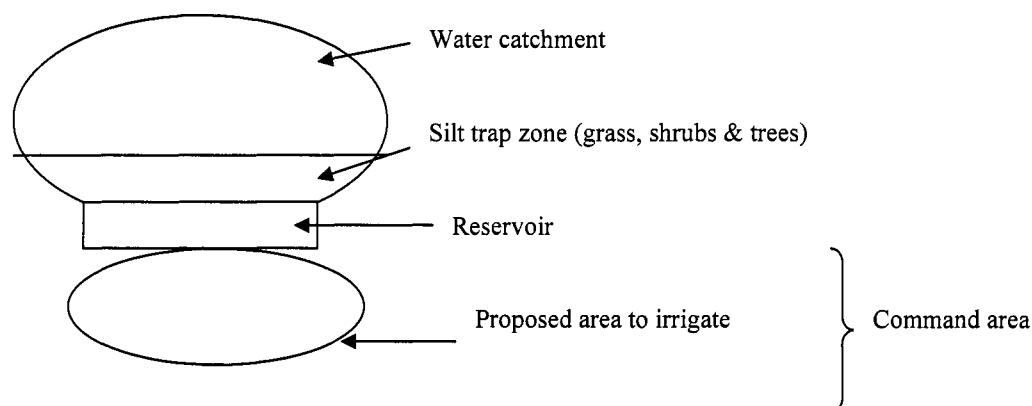
Sub-Component A4: Institutional Strengthening and Capacity Building: MINAGRI and its Agencies

32. Sub-component A4 is designed to help MINAGRI and its agencies to improve their long term capacity for hillside intensification and sustainable land management, including management of environmental impacts of irrigated agriculture. The Project, therefore, covers capacity support for technical aspects, as well as supporting skills' development for the engagement of female and male community members, so critical to intensification and to sustainable land management. Activities to be supported under the Project include: (i) building capacity among MINAGRI staff for gender-sensitive community mobilization, participation, and integrated watershed management approaches (see sub-component B1); (ii) strengthening extension and the technical backstopping capacity of Government staff at all levels by filling the identified human resource gaps through financing higher technical qualifications of appropriate MINAGRI staff; (iii) establishing the use of and capacity for a GIS based dynamic information framework (LWH DIF) as a decision support system responsive to climate, climate change and proposed water, land and crop uses under LWH. The LWH DIF Unit will build active collaborative linkages with the Ministry of Natural Resources' (MINIRENA's) National Land Center (NLC) for access to their GIS resources and for facilitating the land registration for LWH sites and for project affected people relocated; and (iv) building capacity for phytosanitary implementation.

Component B: Infrastructure for Hillside Intensification - US\$20.75 million (US\$18.46 million IDA, US\$0.16 million GoR, US\$2.13 million beneficiaries)

33. The objective of this component is to provide the essential ‘hardware’ for hillside intensification to accompany the capacity development and institutional strengthening activities of Component A. Its three sub-components are organized around the L, the W and the H of LWH: (i) Land husbandry infrastructure supports the development of participatory and comprehensive land husbandry practices throughout the sub-watershed to improve productivity for rainfed and irrigated areas; (ii) Water harvesting infrastructure, including valley dam and reservoirs; and (iii) Hillside irrigation infrastructure, including the development of the water conveyance structures for hillside irrigation. With the exception of a few very large sub-watersheds, the average size for potential LWH sites identified in the Government program so far is about 500 ha, although sites can range from 280 ha to 1700 ha depending on the catchment potential.

Figure 1 Model Site Schemata for LWH



34. Actual site selection is guided by the common criteria for selection developed as part of the Common Framework for Engagement (CFE) and includes variables identified as key by Bank experience in irrigation elsewhere in the world. These include: (i) social criteria; (ii) economic criteria; and (iii) technical and environmental criteria, including the level of environmental impact on the watershed and on downstream marshlands (see Annex 4 for greater detail).¹⁰ Then, in determining the precise package of interventions per site, an option assessment will be conducted, both with respect to the exact location of the hillside infrastructure and to the technologies that will be developed. Beneficiaries include female and male smallholder farmers producing either irrigated or (in majority) rain fed crops within the project sites.

¹⁰ Application of the CFE common criteria for site selection took place during appraisal. See LWH Aide Memoire for site selection details. Four preliminary sites were identified (Gatsibo 8, Nyanza 23, Karongi 12, and Karongi 13), amounting to 4164 ha for development. The Project can finance a further approximate 450 ha for development using the same selection process to identify future site(s).

35. This component will finance civil works, technical assistance, surveys and studies, and goods.

Sub-Component B1: Land Husbandry Infrastructure

36. **The Project will develop participatory and comprehensive land husbandry practices in a sub-watershed setting.** Activities will include soil conservation measures and infrastructure appropriate to differing slope categories (e.g. bunding, green manuring, progressive and radical terracing—see Table 4 in Annex 4 for land husbandry measures proposed by slope category). Given the acidity of Rwandan soils, additional activities such as liming may be necessary. The sub-component is designed to improve hillside agricultural management to protect against water erosion and enhance sustained crop productivity and ecosystem conservation. The activities described will equally benefit both female and male-headed farming households in the project-affected area, whether irrigated or rain fed. Beneficiaries will participate in the selection of appropriate practices and technologies.

37. **The project will invest in infrastructure for downstream reservoir protection.** The aim of downstream reservoir protection is to guarantee the environmentally friendly and long-term use of dam-reservoirs. The Project will finance a silt trap zone for sediment reduction into the reservoir; including fencing the reservoirs; planting perennial forage legumes in all immediate upstream sides of the reservoirs; and planting perennial commercial trees in all immediate upstream sides of the forage legume area. These activities will also include the survey and design of catchments that contribute water in the form of run-off to the reservoirs, including land area to be inundated; and - along with the other sub-components of the Project - activities related to change of land use (from annual crop production to perennial crop production) among farmers who own the land.

Sub-Component B2: Water Harvesting Infrastructure

38. **The Project will invest in water harvesting infrastructure, including valley dams and reservoirs on the selected sites.** Feasibility and detailed design studies for a preliminary sub set of Government-identified sites have been conducted. Dams will vary in size, largely remaining under 20 meters in height, and will inundate about 6-8 ha each on average. Water storage allows for irrigated crop production for 100 days on average, permitting a second crop during the dry season. Water harvesting infrastructure will be developed jointly with the irrigation infrastructure (sub-component B3) and after completion of the beneficiary consultation process referred to under that sub-component.

Sub-Component B3 : Irrigation Infrastructure

39. **The Project will develop water conveyance structures for hillside irrigation.** This includes primary and secondary water distributions and field level application for basin or furrow irrigation. The component also includes command area development of irrigated hillsides, such as land preparation and land leveling, terracing and bunding. Project activities include: (i) confirmation of site selection criteria; (ii) beneficiary consultation and design options selection (see below); (iii) full detailed feasibility and design; (iv) hillside irrigation on all sites developed; and (iv) asset management plans developed for each of the sites developed. For all potential

sites, feasibility and detailed design studies have been conducted or are under preparation by Government. Once completed, they will be shared with beneficiaries for approval of the design.

40. **In order to strengthen the sustainability of the investments, the Project will train WUAs in operation and maintenance (O&M)** of the lower level of the irrigation schemes. For the primary and secondary part of the system, the project will consider piloting outsourcing of O&M to private operators through performance based O&M contracts.

41. **The Project will follow a consultative process for hillside irrigation development.** As with other sub-components, activities will include stakeholder consultations with women and men farmers and other stakeholders, ideally after completion of pre-feasibility studies and the preparation of preliminary design options.¹¹ The design (including crop selection) options will be developed and presented to female and male beneficiaries, who will choose on the basis of this information. Following the beneficiary selection of the preferred options, a detailed feasibility and design study will be commissioned by the Project (if this is not already available) and appropriate activities from other sub-components will be called into play for the selected crops. Separately, an Environmental Management Plan (EMP) and Resettlement Action Plan (RAP) will be prepared. For each site, an asset management plan will be developed that will outline activities, responsibilities and timeline for operation and maintenance of the infrastructure, including WUAs.

Component C: Implementation through the Ministerial SWAp Structure - US\$ 10.47 million (US\$3.42 million IDA, US\$7.05 million GoR)

42. **The objective of Component C is to ensure that Project activities are effectively managed within the new SWAp structure for Ministerial implementation of programs and projects at MINAGRI.** With the very recent restructuring of MINAGRI - both as part of a Government-wide rationalization and to facilitate the implementation of the agricultural sector's nascent SWAp - the World Bank is committed to helping MINAGRI effectively manage and implement its programs and projects without the creation of new project implementation units (PIUs). The activities of this component are, therefore, structured around implementation of the Government's LWH program in line with the SWAp implementation framework proposed by MINAGRI. The PAPSTA project has undertaken extensive diagnostic of MINAGRI with respect to its SWAp implementation capacity and actively informed the SWAp implementation framework to be supported by the Project.

43. **The Project will finance activities that support SWAp implementation of LWH,** including: (i) financing, in the immediate term, (and in coordination with PAPSTA DPs) a portion of the central and decentralized personnel required to implement Program 1 activities (i.e. LWH) under the new structure; and (ii) assisting MINAGRI with the implementation of the new SWAp structure, including rigorous M&E and MIS systems and in their coordination with other essential line ministries (e.g. MINIRENA). See Annex 6 for details on the implementation arrangements under the new SWAp structure at MINAGRI. This component will finance

¹¹ On some sites, detailed site feasibility studies have already been prepared by Government and these will be used in the consultative process.

technical assistance, training workshops and meetings, surveys and studies, and goods (including vehicles).

Table 1 LWH Project Components (Amounts in USD million)

Component A <i>Capacity Development and Institutional Strengthening for Hillside Intensification</i>	Component B <i>Infrastructure for Hillside Intensification</i>	Component C <i>Implementation through the Ministerial SWAp Structure</i>
Sub-component A1- <i>Strengthening farmer organizations</i>	Sub-Component B1- <i>Land husbandry infrastructure</i>	<i>Implementation through the Ministerial SWAp Structure</i>
Sub-component A2- <i>Extension</i>	Sub-Component B2- <i>Water harvesting infrastructure</i>	
Sub-component A3- <i>Marketing and Finance</i>	Sub-Component B3- <i>Irrigation infrastructure</i>	
Sub-Component A4- <i>Institutional strengthening and capacity building of MINAGRI and its agencies</i>		
Component Totals (millions)		
USD13.85	USD20.75	USD10.47
Grand Total		USD45.07¹²

D. Lessons Learned and Reflected in the Project Design

The Project design reflects five key lessons learned from other Bank operations:

44. **The first lesson learned is gleaned from the experience of site selection for Project activities of RSSP.** Specifically, experience from the first phase of RSSP highlights the need to have clearly defined criteria to guide the selection of sites. In the absence of such criteria, it was found that the RSSP priorities were not always well reflected, and opportunities were missed to develop irrigation in a participatory, cost-effective and sustainable way. Accordingly, the LWH Project has worked closely with Government and other interested partners in developing a clear and common set of site selection criteria to form part of the CFE in the LWH. These criteria, discussed briefly above, include the most important variables identified by Bank experience in irrigation elsewhere in Africa, and beyond.

45. **The second lesson concerns the importance of capacity building among Project beneficiaries to ensure maximum benefit from Project activities.** This lesson was learned not only through the RSSP experience, where background studies commissioned to inform the design of the second RSSP phase revealed that many beneficiary groups formed in the first phase were not yet functioning effectively, but through many experiences in rural development and rural finance both within and without the Bank. These lessons are considered particularly important for the LWH project given its transformational nature and hence, the strong need for

¹² The Project costs reported in Table 1 and Annex 5 include approximately USD 6.3 million for resettlement expenses to be financed by GoR, and an important in-kind contribution from beneficiaries. See Annex 5 for greater detail.

buy-in and ownership that comes from consultation and technical empowerment of farmers to effect their own change. Repeated experience in the Bank's rural finance initiatives in Asia, particularly India, point to the need of capacity building among Project beneficiaries to *access* the improved rural financial services that form the object of other Project activities. Finally, the experience of RSSP 2 with WUAs shows that there is a need for sensitization and mobilization around water use and management, particularly as WUAs are new in Rwanda.

46. **The third lesson learned relates to the need to build capacity at MINAGRI to ensure effective implementation of the safeguards policies triggered by the Project.** Active capacity building measures at the level of the RSSP 2 team show that capacity needs to be, and can be built within the Ministry. RSSP2 enjoyed particular success in the preparation and implementation of Resettlement Action Plans (RAPs). This is important as lessons from RSSP 2 show that national capacity of consulting services in this regards is still scarce. Similar to RSSP 2, the Project will take measures to provide the LWH/Program 1 Implementation Team with the capacity to oversee the RPF, as well as the Environmental and Social Management Framework (ESMF) and the Pest Management Plan (PMP). A specialized study for the institutional and human capacity diagnostic of MINAGRI, and its relevant partners (e.g. REMA, MINIRENA, etc.), for effective environmental management is being undertaken with support from the World Bank Environment anchor through the Trust Fund for Environmentally and Socially Sustainable Development (TFESSD). The results inform on the specific capacity building required to strengthen MINAGRI in this regard and, therefore, on the planning and costing of these activities in the Project.

47. **The fourth lesson concerns the marketing component of the Project.** Successful experience in intensification for commercialization elsewhere in the world¹³ indicates the need to balance supply side efforts with demand considerations and value chain development. These lessons have been incorporated into the Project via the activities of sub-component A3, which also includes measures to relieve the binding constraints posed by access to finance, both for working capital and longer term investments in production and marketing.

48. **The fifth lesson concerns the watershed approach to the Project.** In particular, drawing on lessons learned from the Loess Plateau in China and other successful watershed approaches involving the Bank, the Project expanded on the Government's own adoption of the watershed as the unit of development. The Project incorporates lessons learned in other Bank operations concerning the inclusion not only of land, soil, water, vegetation and topography, but of the human watershed community in particular. To this end, an agreed, time-bound, participatory watershed planning process has been adopted by the Project in the preparation of activities. The Project also incorporated lessons learned on the need to have multi-disciplinary teams and local authority representatives in these processes. The latter is also a lesson taken from the Government itself, whose active involvement of local authorities in agricultural interventions (as part of the decentralization agenda) has yielded positive results in other MINAGRI operations.

¹³ For a recent and extensive review, see the Competitive Commercial Agriculture for Africa (CCAA) study (World Bank, 2009 - *Directions for Development*).

E. Alternatives Considered and Reasons for Rejection

49. **The Project has a very strong Government ownership because it is based on their LWH Program design, which originally had a strong ‘hardware’ focus.** The Project had as its starting point, the Government’s original design for LWH activities, centered almost exclusively on the hardware (infrastructure) aspect of hillside intensification, with some group formation and institutional capacity building activities on the side. A preliminary technical mission in November 2008 concluded that the transformational nature of the land husbandry and irrigation activities called for a more holistic approach than that of the original design, involving extensive participatory processes as well (see Component A). The alternative of therefore focusing on infrastructure and (only strictly necessary) group formation was revised, in favor of a design with greater participatory emphasis and activities. To permit the proper execution of these activities, the Project considered the original alternative proposed by Government of a two-year implementation period and decided in favor of a four-year implementation period.

50. **Although not part of the Government’s original design, the Project considered numerous small scale (pump) irrigation models as an alternative to the dam-reservoir-conduit model of the original design.** This was rejected with the clarification of Government objectives of the LWH, because such schemes would not be able to meet the objectives of the Project for horticultural production. In particular, the commercialization objectives of the LWH require year-round production, which in turn requires storage of water. Given the invocation of land consolidation for economies of scale in production, a uniform application of inputs (including water) made it desirable to have one collectively managed infrastructure rather than many small ones with ensuing variance. It was also clear that micro schemes could not have the same flood-control benefits as the reservoir model. Furthermore, such a highly decentralized approach and large number of schemes would limit the opportunities for environmental oversight. Finally, the EFA conducted for the Government’s overall LWH Program (all 101 sites) indicated that the returns to the pump models were lower than those for the dam-conduit-gravity model adopted by the Project.

51. **The Project considered and rejected a Project design that was entirely supply-focused.** The original LWH model proposed by Government did not consider marketing and post-harvest activities in its design. After the technical mission and discussions with Government, both the Government and the Bank Project team adopted a project design that addressed the critical constraints to marketing the envisioned output under LWH land husbandry and irrigation activities. It adopted the marketing and finance activities described in sub-component A3 to address the very real gaps in the downstream value chain that would render the LWH upstream investments profitable. It also commissioned a horticultural marketing study for LWH, financed by EU/All-ACP facility. The Project uses this study to inform the menu and selection process of horticultural crops (see A3 in Annex 4). The Project considered, and rejected, the alternative originally considered of selecting crops on agronomic criteria only (mangoes, bananas, pineapple, coffee and tea), to include these demand side factors.

III. IMPLEMENTATION

A. Partnership Arrangements

52. **Partnership arrangements in the LWH take four forms:** (i) programmatic partnership through the LWH CFE; (ii) co-financing for the IDA-financed Project with CIDA and USAID; (c) technical partnership with the IFC on leasing; and (d) linkages with rural infrastructure and rural finance operations outside the Project. The LWH Program, as discussed above, is a Government program covering 101 sites, of which the Bank-financed LWH Project is a sub-set, with the expectation that a number of other DPs will each finance a slice of the overall program. At the request of Government, therefore, the Bank participates actively with other interested DPs in the development of the different aspects of the programmatic guidelines of the CFE, currently under development. Activities have included joint missions with JICA, CIDA and USAID, workshops on the CFE and on the results framework for the LWH program; and meetings with MINAGRI and partners on implementation. Partnership is key to ensuring a common approach to LWH investments and is manifest in the (developing) CFE document (see Annex 13 for CFE outline). For example, social and environmental safeguards aspects of the Government's larger LWH Program are contributed by the World Bank and form part of the CFE, as does the common EFA methodology to be used by all financiers. However, Government retains the ownership of the LWH in its original design and objectives, and actively collaborates with the Bank and other development partners in developing the LWH Program through, among other things, the CFE.

53. **The Project's financing arrangements form a series of partnerships.** In the first instance, the Project is financed by IDA (US\$34 million) and the GoR (US\$7.33 million, covering their in-kind contribution in terms of staff and overhead, as well as resettlement compensations payments). In addition, other financiers have committed to joining the Bank's support of LWH. USAID is co-financing the operation to the tune of US\$1.5 million in the first year, and is expected to provide an additional US\$12.5 million over the 2010-2013 period. CIDA has committed to providing CDN\$10 million to join IDA funds and requests IDA execution and monitoring of the Project's activities. In the case of USAID, the additional commitment of US\$12.5 million is based on its rolling-year program, and is subject to annual approvals.¹⁴ CIDA's financing is scheduled to be approved by mid-January 2010. With LWH scheduled for Board discussion prior to this time, the current Project financing plan is based on the US\$35.5 million firm commitments from IDA and USAID, plus the GoR and beneficiary expected contribution (see Annex 5).

¹⁴ When additional commitments from USAID and CIDA are formalized, necessary amendments to the Financing Agreement will be undertaken to reflect these changes. The project cost tables have been prepared on the basis of US\$35.5 million, and the activities to be financed by the different DPs have been identified. As and when further funds become available, the Task Team will work with MINAGRI, CIDA, and USAID to identify the additional sites to be financed.

54. **The Project will coordinate with the IFC on sub-component A3 for the development of rural leasing products.** As described above, the project will coordinate with IFC's leasing program, which ends in FY10, in carrying forward a number of promotional and capacity-building activities built up by the IFC. These activities have covered largely urban leasing, including information seminars for financial institutions and training of senior management and operational staff.

55. **The Project will actively pursue linkages with rural infrastructure operations ongoing or planned by the Bank and by Development Partners in Rwanda.** Key among these linkages are those already established with the World Bank Rwanda Electricity Access Scale-Up project, whereby GIS coordinates for LWH post-harvest investments requiring electrification (e.g. pack houses) are incorporated in the scale-up roll-out. Discussions have also been initiated with the World Bank team working on the pipeline Rural Roads project, currently under identification. The idea is to coordinate and leverage Bank operations as much as possible to help meet the Government's growth goals for the sector and for the economy at large. Outside the Bank, through its role as Lead Donor, linkages with DP initiatives include: USAID feeder road and post harvest investments, DFID-supported Land Reform Program, and, for the rural finance activities, with WFP's Purchase for Progress, IFC's Warrantage Program (for warehousing development) and the Access to Finance Rwanda (AFR) initiative.

B. Institutional and Implementation Arrangements

Institutional Arrangements

56. **The LWH will be implemented under Program 1 of the new SWAp structure in MINAGRI.** In accordance with the Paris declaration on aid effectiveness (2005) and the Accra Agenda for Action (2008), Rwanda's sector-wide approach (SWAp) in agriculture is built around coordinated development partner support for the Government's SPAT II, which is divided into four Programs (see above). The Government's LWH Program falls under SPAT Program 1. The SWAp implementation structure (see Annex 6) is composed of four program implementation teams, one for each of the SPAT programs. Each SPAT program will have a Program Manager (PM), and a team of implementation support staff, including a Financial Manager (FM), Procurement Management Specialist (PMS), M&E specialist, and other relevant program experts (see Annex 6). As a result of Project preparation activities, the Project will also have a strong Environmental Officer at the LWH/Program 1 Implementation Team to provide capacity support and oversight for the new sector-level environmental officers. The PM reports directly to the Permanent Secretary in MINAGRI. PMs will manage all projects and programs that fall under their respective SPAT (or PSTA) Program, while individual projects/programs will be managed by a specifically assigned Project Contract Managers (PCMs).

57. **As per the normal implementation procedures of a SIL, the PM will refer to the Bank for support for procurement and financial management functions in implementation** (i.e. no objections, etc.). The LWH Project will support the piloting of this structure as part of its commitments to the SWAp and to greater aid coordination and Government implementation. In order to pilot and build the capacity of the new SWAp structure, LWH will initially be the only activity to be implemented under Program 1 and will follow Bank procurement and financial management procedures, as per ongoing SILs and APLs in the country. As the unique activity

under implementation of Program 1, the LWH Project will not require a dedicated PCM, but fall under the direct responsibility of the Program 1 Manager. By staffing and training the LWH/Program 1 Implementation Team to implement LWH in accordance with the model envisioned by Government for their full SWAp implementation, the Project will contribute to the long term capacity of the Ministry to implement all of its own programs and activities under greater budget support. The Government has prepared a draft PIM, which will be adopted by the Recipient in form and substance satisfactory to the Bank by effectiveness date.

58. **MINAGRI's SWAp Implementation structure envisions one inter-ministerial steering committee (ISC) per SWAp program**, in the place of multiple Program Advisory Committees (PACs) overseeing the activities of multiple PIUs. The ISC sits under the agricultural sector working group (ASWG) and the activities of the Bank LWH operation will be overseen by the Ministerial ISC for Program 1. Representatives from the ministries of agriculture (chair), finance and economic planning, environment, infrastructure and cooperative affairs will sit on the committee, meeting quarterly and ensuring the much needed inter-ministerial and cross-sectoral coordination and oversight.

Project Implementation Arrangements

59. **The Project implementation arrangements take place at three levels: national, district and community level.** Program Manager 1, together with his/her team will follow day to day LWH implementation. In line with the Government's decentralization agenda, the Project implementation arrangements also envision a division and migration of responsibilities and functions to local governments in the vicinity of LWH sites.

National Level

60. As the official executing agency for LWH, MINAGRI will have overall responsibility for the implementation of the Project at the national level, recruiting a Program Manager for Program 1 and the implementation team, as detailed above. The LWH PM will rely heavily on contracts and agreements with implementing bodies, including but not limited to the MINAGRI Rwanda Agricultural Board (RAB) and National Export Board (NEB). MINAGRI boards are expected to have active MoUs with LWH/Program 1 Management for the provision of those services that they are judged best to perform on a national or regional scale. For those services best provided by national or international service providers, they will compete for contracts in accordance with the Bank's procurement procedures.

Provincial and District Level

61. Given the possibility of having MINAGRI boards implement some of the Project activities, such activities will be implemented at the provincial level through the Zonal Agricultural Offices of RAB and NEB where MoUs exist with the boards. **More importantly, at the District level, local government offices will be reinforced by a 'District LWH Implementation Support Team'.** The Project has assessed the common District-level capacity weaknesses and will (i) provide for extra LWH implementation support at District level (see below); and (ii) include a mandate among LWH District implementation support staff to build capacity among their District Government analogues (e.g. LWH District Procurement Officer to

actively engage with District Office Procurement Officer). District-level implementation involves a three part process: (1) The uniform recruitment of a 'core team' of Financial Manager, Procurement Officer, M&E officer plus the core competencies of agronomy, irrigation and SLM; (2) a diagnostic of the existing District capacities available on a District by District basis; and (3) the use of this diagnostic to inform on whether further Project recruitment for the LWH Implementation Support Team is necessary, or whether it is sufficient to build on existing District (civil servant) capacity, or what needs should and can be met through contracts with service providers.

Community Level

62. **Many activities supported by the Project will be demand-driven.** That is, Project beneficiaries will be given a choice of activities, topics, trainings and/or service providers to decide upon according to their own self-assessed needs and preferences. Some activities may also be carried out at the local level by community based organizations. Local entities will identify, prepare, and/or supervise activities supported by the Project and compatible with the LWH CFE. While these activities will be procured with the assistance of central or District LWH Implementation Teams, the communities will be heavily involved in the selection and oversight of activity execution. Further, some activities will be carried out at the local level by community based organizations and their members, for which community-based procurement procedures will be used. Community-based organizations will also be involved in monitoring and evaluation of Project activities, in line with the philosophy of the Project to promote participatory M&E and engaging the direct beneficiaries. In addition, the Project will support the formation of community-based **LWH Site Committees**, involving sector and community leaders together with farmers and other community members for each site. These LWH Site Committees will participate fully in planning and M&E of project activities at site level. LWH site committees will not, however, replace full beneficiary consultation and communication on key site issues (e.g. crop selection, extension demand, and technology information-sharing). LWH Site Committees will be an active interface between service providers and LWH teams at district and central level, and they will play a major role in mobilizing beneficiaries and in facilitating communication.

C. Monitoring and Evaluation of Outcomes/Results

63. **The monitoring and evaluation (M&E) system for the Project will be in line with the proposed implementation structure of the project and therefore fully embedded into the MINAGRI M&E system.** The new SWAp structure in MINAGRI has one M&E Coordinator for each of the four major programs of the SPAT. The M&E Coordinator of Program 1 will therefore coordinate data collection and reporting for all activities in the Program, and is assisted in this task by a District level M&E assistant (see Annex 6), by district agronomists and by community members themselves. These links between the Project and the MINAGRI system will ensure a better use of LWH data and will support timely and informed decision making regarding the achievement of project objectives, without creating parallel M&E systems, in line with the SWAp.

64. **The M&E capacity at MINAGRI will be of key importance to ensuring that data will be available to track progress and to adjust project activities.** To this end, the Project

will support the capacity development of the recently created structure mentioned above (Component C); in coordination with similar activities from the PAPSTA project. Capacity building would also be provided for the decentralized structure as needed. In this way, the different levels of M&E capacity for Program 1 will be strengthened through the Project so that the Project ensures its own strong monitoring and evaluation, as well as contributing to the long term functioning of MINAGRI in the future, in support of the SWAp.

65. **The Project has developed and adopted a common set of results- based indicators that are reflected in the Results Framework** (see Table 2). Indicators are in line with EDPRS and sector strategies, including two indicators that will be disaggregated by gender (see Annex 3 for baseline values and targets). By establishing gender specific baselines and targets the project will make sure that women and men are equally benefiting from the operation. Deviations in this regard could be addressed by specific interventions if needed. Besides the gender disaggregated indicators in the Results Framework, the Project will also be collecting additional disaggregated data that will facilitate a day-to-day Project management. It is also worth highlighting that the Results Framework forms part of the Government's CFE for the LWH and represents the common set of indicators that all financiers of the LWH program will use.¹⁵

66. **The LWH M&E system and arrangements will incorporate additional elements to strengthen data collection and use of M&E information.** This includes the establishment of a link between the LWH Results Framework M&E and the GIS based dynamic information framework (DIF); which will be set up at MINAGRI under LWH. Data collection and data verification could partially be done in a joint exercise with local communities and cooperatives. This participatory approach would not only improve data quality of the GIS system but would also create the opportunity to better use the data and projections of the GIS by farmers and cooperatives on the ground.

Table 2 LWH Results Framework

Project Development Objective	PDO Indicators	Use of Outcome Monitoring
The Project Development Objective (PDO) is to increase the productivity and commercialization of hillside agriculture in target areas.	1. Increase in productivity of targeted irrigated command area (\$/ha)	These indicators will show if farmers have adopted improved technologies that result in increased productivity; and also show if productivity gains improve farmer incomes.
	2. Increase in productivity of targeted non-irrigated hillsides (\$/ha)	
	3. Increase in share of commercialized products from target areas (%)	Indicator will show if project is successful in moving from subsistence farming to a more commercialized farming.

¹⁵ Only the two indicators related to access to finance are not part of the Common Framework list of Indicators.

Intermediate Outcome for each Component	Outcome Indicators for Components	Use of Outcome Monitoring
Component A Capacity and Institutional Strengthening for Hillside Intensification and Commercialization <ul style="list-style-type: none"> ▪ Improved hillside land husbandry technologies and techniques ▪ Strengthened value chains for agricultural products ▪ Expanded access to rural finance 	4. Increased revenues made by cooperatives in project areas	To assess the market/business orientation of farmers' organizations
	5. Cost recovery ratio for operation and maintenance of WUA in project areas	To assess the sustainability of irrigation infrastructure
	6. Proportion of farmers in project affected areas using improved farm methods (disaggregated by gender)	To assess if extension strategy is successful
	7. Percentage of total adult population in the project affected areas which use the services of formal financial institutions (disaggregated by gender)	To assess if access to financial services is being increased
	8. # of project participating financial institutions (PFIs) using new products	To assess if the needed financial products to increase access to finance are being used
Component B Infrastructure for Hillside Intensification <ul style="list-style-type: none"> ▪ Improved infrastructure for hillside agriculture 	9. Proportion of land protected against soil erosion in project areas (ongoing assessment each year)	To assess the improved infrastructure developed by the project
	10. Are a developed for Irrigation in project (ha)	To assess the improved infrastructure developed by the project
	11. Reduced annual soil loss in project areas (MT/ha)	To assess the environmental benefits and sustainability of Project SLM activities

D. Sustainability

67. **Government ownership for the LWH is very strong.** The original conception and design of the LWH was the Government's and the subsequent design modifications (e.g. inclusion of marketing activities, participatory processes, etc.) were developed in full discussion and partnership with MINAGRI and its specialists. The joint work on the CFE for LWH at the Government's request further cements their ownership on the LWH and its activities. As a consequence, the Project, its activities, and its outputs are *de facto*, perfectly aligned with the Government's strategy and objectives for hillside intensification. In brief, the sustainability of the LWH is ensured by the Government's commitment to its own program and strategy.

68. **Bank involvement in the LWH promotes further financier support.** The Project represents the first slice of a wider Government program and in taking the lead, has already catalyzed interest in other financing partners (e.g. JICA (as independent financiers), CIDA and USAID). This is commensurate with the role of the Bank as lead donor for the agricultural sector.

69. **The Project's support of the common framework for engagement (CFE) ensures the sustainability of a consistent approach to hillside intensification in Rwanda.** In working with the Government and other development partners on the CFE, common approaches to hillside intensification, sustainable land management, dam and irrigation construction and the social and environmental safeguards that accompany these in the CFE also ensures the sustainability of a common approach to the LWH, beyond the IDA operation.

70. **Finally, the Project is designed with sustainable intensification in mind.** The lion's share of project affected area falls under comprehensive land husbandry activities aimed at curtailing erosion and maintaining/restoring soil fertility. The Project activities are undertaken with a careful eye to externalities and to ensuring buy in by women and men farmers and affected households. Such local level ownership is imperative to the sustainability of the measures undertaken in the LWH and form a core part of the Project's activities and approach.

E. Critical Risks and Possible Controversial Aspects

<i>Risk Factors</i>	<i>Description of Risk</i>	<i>Rating^a of Risk</i>	<i>Mitigation Measures</i>	<i>Rating^a of Residual Risk</i>
I. Country and Sector-Level Risks				
Country Governance: Decentralization	Ongoing decentralization efforts have not yet resulted in improved quality of service delivery. While the delivery of public services continues to increase due to the government's policy of decentralization, the quality of services continues to be low. Fiscal decentralization remains a major challenge.	moderate	The Bank supports capacity building at decentralized levels through the ongoing Decentralization and Capacity Building project as well as ongoing support to PFM reforms including preparation of local level PEFAs which will help assess specific areas of weaknesses at decentralized levels. The GoR and its development partners have recently concluded a Joint Governance Assessment which provides a good basis for dialogue on governance issues. In relation to the LWH, the Project's Component C finances implementation capacity at the District level and envisions a closer coordination between Project sites and the EU's €20 million sectoral budget support to MINAGRI for decentralization activities and capacity-building. ⇒ The rights to land are already protected by the 2005 Land Law and this will be well communicated to participants by the Project itself. ⇒ There is a firm Government commitment to the land titling agenda to complete all titling by 2012. Phase 1 of the National Land Tenure Regularization Program has been completed and Phase 2 begun (with £18,500 DFID support). ⇒ Discussion has already begun to prioritize LWH districts in the Land Tenure Regularization Program at the DP level with DFID, and MINAGRI will undertake the same with MINIRENA	moderate
Sectoral Risk: Land Policies and Institutions	The issue of land titles, the absence of which reduces willingness of people to undertake investments on their land, is under the purview of a separate Ministry (MINIRENA).	moderate		low
Operation-specific risks				
Technical Design	Due to the transformational nature of LWH productivity measures on private land, community buy-in from women and men beneficiaries is critical to the operation's success.	moderate	⇒ Operation design specifically includes community mobilization, communication and gender activities—fully resourced ⇒ The Project further financed (through PPF) a strategic social assessment for communication, mobilization and gender to fine-tune activities by site and propose a common	low

Risk Factors	Description of Risk	Rating^a of Risk	Mitigation Measures	Rating^a of Residual Risk
Implementation Capacity	The proposed SWAp Implementation Structure, through which LWH will be implemented, is completely new. The LWH has multifaceted activities due to a holistic watershed approach and strong coordination is required. The new structure meets the GoR and development partners' commitments to a sector SWAp and Paris Declaration Principles, but it will be a pilot with the LWH which entails some implementation risk.	high	<p>approach for the CFE.</p> <p>The LWH is not 'going it alone':</p> <ul style="list-style-type: none"> ⇒ The SWAp Implementation Structure has benefitted from repeated discussion and ratification by the agricultural sector working group ⇒ The early and full engagement of the MINAGRI (DFID and IFAD-supported) PAPSTA project throughout project preparation has ensured that the extensive diagnostic work undertaken by PAPSTA on MINAGRI implementation capacity have informed LWH implementation. Gaps identified are covered jointly by PAPSTA and other initiatives. ⇒ Similarly decentralized implementation is a core part of MINAGRI's strategy and supported by its own budget. ⇒ The LWH is a SIL, with the procurement, FM and supervisory oversight of the Bank at all times. 	moderate
Financial Management	Due to the implementation arrangements proposed for the operation (namely, implementation through the Ministry's nascent SWAp Structure), the financial management risks of the operation are to a large degree those of the Ministry's. A recent independent PFM assessment of MINAGRI, commissioned precisely to assess the Ministry's capacity for implementation, concluded that the current structures of the Department of Administration and Finance (DAF) do not have a proper finance function but just routine accounting and administration.	substantial	<p>In order to successfully coordinate and oversee implementation of SPAT II under a SWAp, MINAGRI has re-organized its structures to streamline working relationships amongst all units, institutions and decentralized entities involved in the implementation of the sector strategic plan. LWH Program falls under SPAT Program 1, one of four program implementation groups making up the SWAp implementation structure. LWH/ Program 1 Implementation Team will have a Program Manager (PM) reporting directly to MINAGRI's Permanent Secretary, a Financial Manager (FM) and Procurement Officer (PO) to fill the proper finance function needed for the Project, linking to the DAF only for reporting. The LWH Project will enhance the Ministry's own implementation capacity.</p>	moderate
Procurement	The main procurement risks include (i) insufficient experienced staff for procurement with a new SWAp structure covering a wide range of activities; and (ii) lack of procurement knowledge and procedure at the district	high	<p>In early recognition of these risks:</p> <ul style="list-style-type: none"> ⇒ The Project started the early recruitment of a procurement specialist at the national LWH program level under the PPF, who is now in place; ⇒ The Project also agreed with Government that this 	moderate

Risk Factors	Description of Risk	Rating^a of Risk	Mitigation Measures	Rating^a of Residual Risk
	level for Bank-financed projects.		LWH/Program 1 implementation team would initially be uniquely charged with LWH Project implementation (as opposed to the other activities possibly fitting under Program 1) in order to mitigate the risk of overburdening recruited capacity; ⇒The Project also explicitly included in its implementation design, an “LWH District Support Team” which includes a Bank-trained procurement assistant to build capacity for solid procurement (and minimize operational risks) at the decentralized levels.	
Social Safeguards	Water harvesting and hillside irrigation under LWH affects the use of productive resources, especially land, by rural populations. Failure to adequately implement RPF activities, particularly compensation, in a timely manner would undermine community interest and participation in the project, as well as violate Bank social safeguards policies. Capacity for preparation and implementation of Resettlement Action Plans (RAPs) in-country is low.	substantial	Consistent with World Bank safeguards policies, a Resettlement Policy Framework (RPF) has been prepared and will be implemented for all developed sites. The implementation capacity gap needs to be addressed by the early identification of domestic and regional consultancy expertise in RAP preparation and implementation. In this, the Project benefits from ongoing capacity building for resettlement under other Bank operations (RSSP 2).	moderate
IV. Overall Risk (Including Reputational Risks)				
Overall Risk Rating	The overall and reputational risk of the operation is rated moderate. The Project is fully aligned with the Government's growth priorities as expressed in the EDPRS, and with the sectoral strategy (SPAT). The operation addresses precisely the key constraints to agricultural growth and therefore has the potential to be transformational. There is very strong ownership by Government and the coordination and dialogue with other DPs has been good, maximizing the chances of strong synergies for the operation's success. There is some element of risk in implementation through the nascent SWAp structures, but the benefits to such in demonstration effect and catalyzing support for the SWAp temper this risk, and Project design features mitigate it. Given the operation intentionally builds in community organizational support and buy-in, as well as the safeguards framework, the likelihood of occurrence for social risk is low, but the potential adverse impact is substantial. Community buy-in is key to the operation's success.			moderate

^a Rating of risks on a four-point scale – High, Substantial, Moderate, Low – according to the likelihood of occurrence and magnitude of potential adverse impact.

F. Loan/Credit Conditions and Covenants

(a) Effectiveness Conditions

71. The following table shows the Financial Management Credit effectiveness conditions and the responsible parties to meet the condition.

	Required Action	Responsible Party
1	Open separate, segregated designated accounts for IDA Credit and Trust Fund Grant in the National Bank of Rwanda denominated in US dollars, respectively; and open a 'Project' account in local currency along with a deposit equivalent to US\$62,500, being the first of the deposits referred to in Section V.A (b) of Schedule 2 of the Financing Agreement.	LWH/Program 1 Implementation Team
2	Recruit an accountant for LWH/Program 1 Implementation Team.	LWH/Program 1 Implementation Team
3	The Project Implementation Manual has been adopted by the Recipient in form and substance satisfactory to the Association.	LWH/Program 1 Implementation Team
4	The annual work plan and budget for the Project for the First Fiscal Year of Project implementation has been furnished by the Recipient to the Association for approval.	LWH/Program 1 Implementation Team and World Bank

(b) Implementation covenants

72. The following table shows the Financial Management implementation conditions and the responsible parties to meet the conditions.

	Required Action	Responsible Party
	(a) The Recipient shall, no later than three (3) months after the Effective Date, install appropriate/adequate software for purposes of financial management under the Project; and, (b) The Recipient shall, no later than one (1) month after the Effective date, appoint, in accordance with the provisions of Schedule 2, Section III of the Financing Agreement, external financial auditors, with qualifications, experience, and terms	MINAGRI LWH/Program 1 Implementation Team

	<p>of reference satisfactory to the Association.</p> <p>(c) The Recipient shall deposit into an account in Rwandan Francs, in a commercial bank acceptable to the Association, on a quarterly basis throughout Project implementation, an amount equivalent to \$62,500, or such other amount as agreed with the Association</p>	<p>LWH/Program 1 Implementation Team</p>
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(c) *Legal Covenants*

73. Financial covenants are the standard ones as stated in the Financing Agreement Schedule 2, Section II (B) on Financial Management, Financial Reports and Audits and Section 4.09 of the General Conditions.

74. In addition, the Recipient is seeking approval for proceeds of the credit to be disbursed using the retroactive financing mechanism for amount not to exceed US\$1,000,000 (3% of the credit) and for eligible expenditures paid on or after November 1, 2009, and before the Financing Agreement date.

IV. APPRAISAL SUMMARY

A. Economic and Financial Analysis

75. **Activities financed through the LWH are expected to generate four broad categories of benefits:** (i) on-site private benefits within the project area coming from direct income increase, avoidance of yield or income loss without project, food security, risk reduction, increased employment, and securing long-term income opportunities; (ii) downstream public benefits in the form of externalities such as sediment load reduction and its associated cost savings from avoiding sediment load removal costs and from reduction of irrigation capital costs; and (iii) global public benefits in the form of carbon sequestration. From the point of view of the economic and financial analysis, the three Project components represent one integrated package and cannot be treated separately. Resettlement costs, environmental safeguards and soil erosion control measures are included in the project costs, which are an integral part of the watershed approach. Both economic and financial analyses used the same financial prices as economic prices for tradable goods, since there are no major policy distortions affecting the prices of inputs and outputs.

76. **The overall economic and financial analysis of LWH Project shows strong economic and financial profitability.** From the financial analysis, NPV is US\$61.9 million (using a 12 percent discount rate and 50-year benefit and cost stream) and financial rate of return (FRR) is 28 percent. From the economic analysis, the NPV is US\$73.8 million (using 12 percent discount rate and 50-year benefit and cost stream) and economic rates of return (ERR) is 29 percent. These returns are based on the projected Project investment in six sample sites (for which financing is available through the operation). The returns to the Government's overall LWH Program (101 sites) show similar strength with a net economic value per year of US\$84.7 million. Furthermore, the LWH Project shows strong economic and financial profitability in all the scenarios estimated, despite explicit consideration of pessimistic scenarios (see Annex 9). The lion's share of benefits comes from the first category of onsite private benefits.

B. Technical

77. The design of the land husbandry, water harvesting and hillside irrigation technical activities of the Project was informed by the findings of early studies conducted by international and local expert consultants. Funded by MINAGRI, a team led by qualified international consultants affiliated with ICRAF (World Agroforestry Center) conducted a number of technical studies over 2007 and 2008 to inform the Government's program. The studies were later reviewed by the Bank's experts. They include hydrological, topographical, agro-climatic and agronomic assessments for hillside intensification; conceptual design studies summarized in the Government's LWH Program Proposal; detailed site feasibility studies for a number of sample LWH sites; detailed watershed design studies; detailed dam and irrigation infrastructure design studies; Environmental Impact Assessments (EIAs) on a sample of sites; and socio-economic surveys. These studies enabled the Project to make concrete activity proposals and provide important baseline information.

78. The final design of the Project's two technical components is further informed by a number of studies, recently undertaken. Except where indicated, these studies were funded through the PPF:

- Resettlement Policy Framework;
- Environmental Impact Assessment, Environmental and Social Management Framework & draft Environmental Management Plans;
- Extension Assessment and Strategy;
- Institutional Diagnosis of Farmer Organizations and Capacity Strengthening Strategy;
- Strategic Social Assessment of Community Mobilization, Communication and Gender;
- Assessment on the Legal Framework concerning Rural Financial Products;
- LWH EFA Methodological Paper for Incorporating Social and Environmental Externalities (IDA)
- Financial Access in Rwanda, FinScope (DFID-financed)
- LWH Horticultural Markets and Marketing Study (EU/All ACP Trust Fund for Horticultural Development)
- Institutional Diagnosis for Environmental Management (TFESSD)

79. The final Project design reflects the technical recommendation of the need for a balanced 'hardware' and 'software' approach (see Section C above) and the need to focus on marketing considerations. The Project had as its starting point, the Government's original studies and design for LWH activities, which were technically very solid. As noted above, they centered, however, almost exclusively on the hardware (infrastructure) aspect of hillside intensification, with some periphery group formation. The transformational nature of the land husbandry and irrigation activities proposed called for a more holistic approach than that of the original design, involving extensive participatory processes and strong capacity building as well. To this end, the diagnoses on farmer organizations, the extension strategy and the strategic social assessment for community mobilization, communication and gender indicate the priority

activities and resources necessary to ensure the institutional and human resources required for Project success. These were incorporated into Project design. Project appraisal activities further confirm the need to prioritize communication and community mobilization activities as early in Project implementation as possible. Furthermore, the original Government program design required a more marketing-based selection of horticultural crops that takes into consideration potential domestic, regional and overseas markets. The results of the LWH horticultural study provided very clear guidance on the priority on-farm and post-harvest investments—both software and hardware—that would be required for getting goods to markets. This directly informed on the design of A3, as well as helping in the conception of participatory crop selection processes. Finally, the safeguards work in Project preparation led in turn to the institutional diagnoses for environmental management and have informed not only Project design, but also the Project's methodological approach to economic and financial analysis. Environmental capacity diagnoses by the TFESSD study, particularly at decentralized levels, were critical to the correct costing and planning of environmental oversight activities for the Project.

C. Fiduciary

80. **Financial Management.** The Rwandan Government has made tremendous strides towards improving accountability under the Public Financial Management (PFM) reforms. A comprehensive review by the Office of the Auditor General, however, revealed inadequate support of expenditure as a significant shortcoming and hence, a persistent underlying weakness in PFM. At the level of MINAGRI, a complete diagnostic of their PFM capacities was undertaken and the gaps and weaknesses clearly diagnosed. This diagnosis forms the basis of the SWAp structure in which Finance Managers (FM) have been assigned for each SPAT Program. The TOR for Finance Managers (FMs) for the SWAp structure have benefited from the input of the World Bank's Financial Management Specialist. Further to this diagnosis, activities during Project appraisal confirmed the need, at District level, for FMs to form part of the 'core' LWH District Implementation Support Teams. At central level, the LWH/Program 1 Manager will be responsible for oversight of the Project's procurement and financial management functions. The Program 1 Manager is supported in this function by specially recruited Procurement Specialist and FM. The overall responsibility over the LWH's financial matters will remain with the FM for Program 1. S/he will report to the Program Manager who will report directly to the Permanent Secretary in MINAGRI. The key staff members identified to support the implementation of the LWH/Program 1, that will account for the Credit funds, include the Permanent Secretary, MINAGRI's Internal Auditor, the Program Manager 1, the LWH Contract Manager (if Program 1 should expand activities beyond LWH, see Annex 6) and the FM (LWH/Program 1). A number of risks have been identified (see Annex 7), particularly with reference to decentralized Project activities, and mitigation measures have been incorporated (and budgeted) into the Project costs. The overall residual risk rating for the Project is moderate.

81. **Procurement.** Procurement for the Project will be carried out in accordance with the World Bank's "Guidelines: Procurement under IBRD Loans and IDA Credits" dated May 2004 (revised October 2006); and "Guidelines: Selection and Employment of Consultants by World Bank Borrowers" dated May 2004, revised October 2006, and the provisions stipulated in the Legal Agreement. The procuring entity, as well as bidders, suppliers, and contractors will observe the highest standard of ethics during the procurement and execution of contracts financed under the program. The Project will carry out implementation in accordance with the

“Guidelines on Preventing and Combating Fraud and Corruption in Projects Financed by IBRD Loans and IDA Credits and Grants”, dated October 15, 2006 (the Anti-Corruption Guidelines). Procurement activities will be coordinated by the Procurement Specialist of LWH/Program 1 Implementation Team, who will be accountable to the Program 1 Manager. The LWH/Program 1 Implementation Team will oversee the LWH Project implementation at the national level and will also support and carry out procurement activities through the District Offices, which will be staffed with an LWH District Implementation Support Team (including Bank-trained Procurement Officer). The overall residual procurement risk for the Project is rated as moderate, taking into consideration the cost of capacity building measures incorporated into the Project to address varying capacity across the different levels of implementation (see Annex 8).

D. Social

82. The Project activities promote the achievement of social development outcomes of inclusion and cohesion for women and men, through the mobilization and sensitization of farmers to intensification, greater integration into markets and through greater financial inclusion. Project activities in these respective areas result in self-help group formation, greater participation in the local, regional and international economies and greater control in managing their vulnerability to risk through appropriate rural finance products such as savings and insurance. A PPF-financed gender analysis of these activities forms a central part of the strategic social assessment as part of Project preparation activity.

83. Project activities aimed at raising organization-member awareness of legal provisions for their rights under the Cooperative Law will empower rural women and men to manage issues affecting organization leadership and decision making processes. While there are over 2,500 grass roots district level farmers’ associations and cooperatives in Rwanda, many of these are in need of basic governance and member capacity building. Some of the guidelines under the Cooperative Law have been difficult to apply in farmers’ cooperatives, where education and knowledge on legal provisions is particularly weak. Raising member awareness and capacity in cooperative management will help members to take control and correct any failure of leaders to address their pressing needs (e.g. for farm input supply, quality seeds and technical advice). In many cases, the lack of leadership responsiveness is due to lack of pressure from members for such services. The Project activities will strengthen member ability to articulate their needs and ensure accountability of their leadership.

84. The Project will use participatory land use processes to promote high level stakeholder involvement, and to empower the community members in their comprehensive land management work. It is anticipated, however, that hillside irrigation infrastructures that include valley dams and reservoirs, and downstream reservoir protection through the development of a silt trap zone may have implications on access to either common assets/resources or livelihoods of the surrounding communities. A Resettlement Policy Framework (RPF) has been prepared and disclosed in-country (7 August 2009) and at the World Bank Infoshop (10 August 2009). The RPF document outlines the principles and procedures for resettlement and/or compensation of subproject affected people, and establishes standards for identifying, assessing and mitigating negative impacts of program supported activities. In addition, the RPF will guide the preparation and implementation of Resettlement Action Plans (RAPs) for each individual sub project that triggers OP 4.12, Involuntary Resettlement Policy.

The RAPs would be prepared in consultation with the affected individuals and communities. Resettlement assistance and compensation for losses will also be determined through the same consultative process to ensure that no one is left worse off as a result of the relevant program activities. RAP preparation and implementation are based on existing laws and regulations of Rwanda as well as the World Bank Policy (OP/BP 4.12). Other social impacts resulting from construction of irrigation and valley dams including primary and secondary water distribution piping will be addressed through the Environmental and Social Framework (ESMF) that has been prepared and disclosed in the same manner as the RPF (see Annex 10 for details).

E. Environment

85. The project is expected to yield significant positive environmental impacts through its land husbandry component. Project supported activities include promotion of sustainable land management (SLM), catchment conservation, exclusion of the most vulnerable portions of the watershed from the ongoing agricultural use, afforestation, and other measures, in an agricultural landscape that is already extensively used and densely populated. Its soils, flora, fauna, and sometimes hydrology is considerably altered or degraded, and the Project takes places at sites that are under unsustainable agricultural use. At the same time, the project has a potential for localized adverse environmental impacts from its water harvesting and hillside irrigation components which include the construction and use of irrigation infrastructure and other activities associated with agricultural intensification. Although the LWH envisions organic niche markets as one of the outlets for increased horticultural production, agricultural intensification could always bring with it increased pesticide use.

86. At the Project site level, these risks will be managed through implementation of mitigation measures resulting from site specific Environmental Assessments and Environmental Management Plans (EMPs). At the level of the GoR's overall LWH program, and for new site selections, these risks will be managed through implementing recommendations of the overall EIA of the LWH Program, which includes consideration of potential cumulative impacts, and application of Environmental and Social Management Framework (ESMF) for the LWH Program as a part of the CFE. The ESMF and CFE include site screening and selection criteria (environmental and social) to be applied at all potential sites to be developed in the Government's program. Through a TFESSD funded consultancy, the Project has identified concrete weaknesses in environmental oversight management and specified (costed) mitigation measures for these. For example, the study's identification of recent changes from District level to sector-level Environmental officers has led to the Project costing for a strong centralized Environmental Officer in LWH/Program 1, rather than reliance on (now-defunct) weaker District level officers.

F. Safeguard Policies

87. The project is rated as environmental assessment category "B". The project may have limited adverse environmental and social impacts, triggering the following safeguard policies:

Safeguard Policies Triggered by the Project	Yes	No
Environment (OP/BP 4.01)	[X]	[]
Natural Habitats (OP/BP 4.04)	[X]	[]
Pest Management (OP 4.09)	[X]	[]
Physical Cultural Resources (OP/BP 4.11)	[X]	[]
Involuntary Resettlement (OP/BP 4.12)	[X]	[]
Indigenous Peoples (OP/BP 4.10)	[]	[X]
Forests (OP/BP 4.36)	[X]	[]
Safety of Dams (OP/BP 4.37)	[X]	[]
Projects in Disputed Areas (OP/BP 7.60)*	[]	[X]
Projects on International Waterways (OP/BP 7.50)	[X]	[]

Safeguard policies triggered, and their respective safeguard instruments are discussed in detail in Annex 10.

88. **To ensure compliance with these policies, an ESMF and Resettlement Policy Framework (RPF) have been prepared, and a Riparian Notification has been issued.** In addition, an overall Environmental Assessment of the Government's larger LWH program has been prepared, assessing, among others, the potential for cumulative impacts. The EA, ESMF and RPF have all been disclosed both in-country and at the World Bank's Infoshop in early August 2009. A revised ESMF was disclosed in-country on November 10, 2009, and at the Infoshop on November 11, 2009, to reflect requirements relating to the Safety of Dams (OP/BP 4.37) and references to the Government's Guidelines for Managing Small Dams, which have also been disclosed simultaneously. The ESMF guides the screening of project investments for potential adverse environmental and social impacts and triggering of other safeguard policies as well as preparation of site specific environment assessments and management plans. The ESMF also provides guidance on the mitigation and handling of chance finds of physical cultural resources during earthworks.

89. In accordance with OP 7.50, a Riparian Notification was prepared, cleared and issued on August 10, 2009 by the Bank on behalf of the Government of Rwanda. The Ruzizi Basin is part of the Lake Tanganyika Basin, and the riparian states other than Rwanda are: Burundi, the Democratic Republic of Congo (DRC), Tanzania, and Zambia. The Kagera Basin is part of the Lake Victoria and Nile River Basins, and the riparian states other than Rwanda: are Burundi, the DRC, Egypt, Eritrea, Ethiopia, Kenya, Sudan, Tanzania, and Uganda. Countries were given a response time of 60 days from notification (lapsing October 6, 2009). Six countries responded: Egypt (September 8, 2009), Burundi (October 2, 2009), DRC (October 5, 2009), Kenya (October 7, 2009), Tanzania (October 15, 2009), and Zambia (October 27, 2009). Egypt and Tanzania noted the negligible impact recorded in the Notification, and along with Zambia voiced no concerns, comments or objections. Tanzania suggested that impact on water quality be assessed during implementation, which is provided for under the Project. In addition to their strong support for LWH, Kenya pointed out the general importance of mitigating measures in irrigation

* By supporting the proposed project, the Bank does not intend to prejudice the final determination of the parties' claims on the disputed areas

for efficiency, erosion and sedimentation, chemical leaching and afforestation. Accordingly, the team responded to the Government of Kenya with the reassurance of a Bank-cleared and publicly disclosed PMP and EIA, as well as pointing out the significant dedicated resources in the Project for afforestation and erosion control (i.e. land husbandry) measures in the Project design, pointing out that a full sub-component of the Project is dedicated to such. Burundi and DRC both indicated a desire to repeat the environmental and water impact technical work with their own experts. The extensive technical studies prepared during Project identification and preparation, as well as the EIA, cleared and disclosed by the Bank in August 2009, underpin the impact information shared in the Riparian Notification. This technical work confirms that the Project will not cause appreciable harm to the riparians (see above). In its response to the Governments of Burundi and DRC, therefore, the Bank provided the link to the publicly disclosed LWH EIA containing the extensive data and analysis cited as important in their riparian response. All riparian respondents were also provided with a further window of response until November 13, 2009.

90. Careful consideration was made to the application of OP 4.10 for this project with regard to communities that have been historically marginalized due to cultural and political reasons, including the Batwa ethnic group, who in the past had distinct livelihoods.¹⁶ It is estimated by the Government of Rwanda that 25,000-30,000 of these historically marginalized people live in Rwanda at present. A socio-economic survey undertaken in 2004 notes that the historically marginalized people live in small groups dispersed throughout the country and earn their livelihoods as potters, laborers and porters. Further, the survey notes that these persons/communities do not participate in traditional community life distinct to the group, although they would be considered vulnerable. The survey also concludes that only about 14 percent of these persons/communities, some 920 households live in rural areas,¹⁷ where the LWH project will necessarily operate (as an agricultural project).

OP4.10 screening for LWH

91. Notwithstanding the small number of rural historically marginalized households in Rwanda, the small likelihood that these would be found in groups, and the even smaller likelihood that if there were such groups, they would be living a traditional lifestyle, several layers of screening were undertaken during Project preparation in areas likely to be served by the Project. The screenings took place to provide for field verification of an emerging conclusion that historically marginalized persons/communities would not be affected by the Project. In determining whether OP 4.10 applies to the LWH Project, the following screening activities were undertaken:

¹⁶ According to GoR, marginalized people and communities in Rwanda refer to people and communities that have been marginalized in the past due to: i) their cultural identity and practices (Akagera and ex-Umutara) or ii) isolated geographic location (islands of Nkombo and Mazane, forests) or iii) due to political reasons. The Batwa community has in fact been affected by all three of the above and they are sometimes referred to in different reports as Indigenous Peoples, even though this is not the position of GoR.

¹⁷ Amédée KAMOTA, 2004, "*Enquête Sur les Conditions de vie Socio-économique des menages Bénéficiaires de la communauté des autochtones Rwandais*" The safeguard review team has determined that this survey remains relevant today in that conditions are unlikely to have changed in any significant manner in the last 5 years.

(i) Mayors, other local leaders and community members were consulted in seven communities of Kayonza, Bugesera, Karongi and Gatsibo districts. These districts are included in the proposed Rwanda LWH Project and are notable rural growth centers (that may also be considered for rural electricity connections under the Rwanda Electricity Access Scale Up project). Discussions with both men and women provided no evidence of distinct historically marginalized groups or individuals in the visited localities. The screening was undertaken as a pulse taking and a modest effort in light of OP 4.10, given the low chances of expected impact on the historically marginalized people (see earlier footnote 17);

(ii) Further to this modest effort, the socio-economic studies undertaken for the potential sites being considered for the Project did not yield information on historically marginalized persons/communities with distinct livelihoods that might be affected by the project.¹⁸ Instead, the studies showed a great deal of conformity (e.g. 81 percent had basic education, 100 percent own residences made out of earth walls and iron sheets roofing, while historically marginalized persons/communities in this country are known to have no education and temporary shelters made of sticks and grass, etc.). These observations were meant as indicative only to help with the preliminary identification of any historically marginalized persons/communities;

(iii) Further to these indications, the Strategic Social Assessment commissioned during Project preparation undertakes to identify any historically marginalized and vulnerable groups (see footnote 7) by conducting a self-identification survey in potential Project-affected areas. (This activity was prepared in order to better plan for the participation of vulnerable groups in the proposed LWH project, including historically marginalized groups, returning and returned refugees, persons affected by HIV/Aids, orphans, widows /widowers and the elderly). This activity, with respect to OP4.10, extended the screening beyond that which was done (i) in the seven communities and followed up with (ii) the socio economic studies.

(iv) Finally, the Project used the Strategic Social Assessment preliminary identification of 'historically marginalized people' to follow up with a site-by-site screening by Social Development and Safeguards Specialist during Appraisal to determine whether these are Indigenous People, as defined by OP4.10.

92. During the appraisal mission (September 1-15, 2009), this fourth round of screening by the Team's Social Development Specialist confirmed the absence of any Indigenous Peoples as defined by the World Bank Policy 4.10, by visiting households that had been identified as "historically marginalized." These visits confirmed at five specific LWH sites level, that there is a great extent of integration of all groups of people since 2003 into villages (*imidugudus*) and, therefore, there were no groups identifying themselves or recognized as a distinct cultural group, or have collective attachment to distinct habitats or ancestral territories. All people have taken on farming and some in addition have taken on pottery, and own the plots of land where their houses are situated. All children attend school and they speak the same language - Kinyarwanda.

¹⁸ MINAGRI, 2008. Detailed Survey and Design Study –Socioeconomic studies, LWH project

Therefore, it has been concluded that there are no Indigenous Peoples in the Project area, as defined in the Bank Policy OP 4.10. However, other marginalized groups, such as people affected by HIV/AIDs, widows, the elderly, etc., were found and these will be provided for in the RPF and other Project activities. Based on the above analysis, it was concluded that OP 4.10 does not apply to the proposed LWH Project. In all cases, should vulnerable people that may be relevant to OP 4.10 be unexpectedly noted through the preparation of Project activities, and require the application of OP 4.10, an Indigenous Peoples Plan will be prepared in accordance with the policy.

93. In general, Project impact on any vulnerable household includes the provision of targeted assistance to those who would like to improve their livelihoods through land use management measures for increased productivity and commercialization of hillside agriculture. Negative impacts, if any, would be related to both permanent and temporary land acquisition associated with land husbandry measures for hillside agriculture in selected sites (e.g. establishment of reservoirs, development of primary and secondary water distributions, and construction and maintenance of terraces). These issues have been addressed in the Resettlement Policy Framework (RPF) that will be disclosed in accordance with OP 4.12. The RPF provides for impact on all groups of vulnerable and marginalized men and women, including returning and returned refugees, people affected by HIV/Aids, orphans and the elderly.

G. Policy Exceptions and Readiness

94. **The Project complies with all applicable Bank policies, and no policy exceptions are required.** A Project Preparation Advance in the amount of US\$913,285 was used to support key studies and capacity building for the preparation of the Project. In terms of readiness, the GoR has already hired the core personnel for LWH/Program 1 Implementation Team, including Program Manager, Financial Management and Procurement officers. GoR has also: (i) prepared a draft Project Implementation Manual (PIM, including a Financial Management manual) which is expected to be finalized by December 15, 2009; (ii) prepared a procurement plan for the first eighteen months; (iii) submitted a Letter of Sector Policy, which is attached as Annex 14; (iv) addressed safeguards issues and disclosed safeguards documents (e.g. ESMF); (v) notification letters were sent out to the riparian countries as required under OP 7.50, and (vi) written commitments for co-financing have been received from USAID, and the related trust fund arrangements are expected to be finalized shortly. As noted above, the GoR has been working actively on the design and preparation for their larger LWH Program since March 2008, putting this supporting operation in an advanced state of readiness.

Annex 1: Country and Sector or Program Background

RWANDA: Land Husbandry, Water Harvesting and Hillside Irrigation Project

(a) Country Context

1. Both the economic growth and the poverty-reduction objectives for Rwanda rely critically on agricultural growth. As noted in Rwanda's recent CAS (FY09-FY12), Rwanda appears to have fully exhausted the growth effects of its post-conflict reconstruction. The CAS thus highlights the need to activate new drivers to sustain rapid and inclusive growth, raise incomes and reduce income poverty. Agriculture is identified by the Government as one of the key sectors in both its poverty reduction strategy, the EDPRS,¹⁹ and in its longer-term Vision 2020 document. In actual fact, the improved performance in GDP growth seen in 2008 (8.5 percent) has largely been credited to strong agriculture growth that year (14.8 percent). This is largely because of the sheer size of the sector, and because of important backward and forward linkages.²⁰ Despite the country's potential for growth, at the present time, Rwanda remains one of the world's poorest countries, with an average annual income of US\$320 per capita. According to national poverty standards, more than one-third of all Rwandans (37 percent) live in extreme poverty (defined as earning less than RWF175 per day, the level of income needed to support daily food consumption of 2,500 KCal), and more than one-half (57 percent) live in moderate poverty (defined as earning less than RWF250 per day).²¹ Poverty remains largely a rural—and agricultural—phenomenon with rural poverty at 67 percent. Poverty incidence among families whose main source of income is agricultural wage labor is extremely high at 91 percent. Therefore, it is not only the growth agenda, but also the country's MDG on poverty which depend critically on improving agricultural productivity, given that 80 percent of the country's labor force is engaged in agriculture. For these reasons, the CAS places particular emphasis on the importance of achieving higher productivity for agriculture.²²

2. Agriculture is the backbone of Rwanda's economy, accounting for about 39 percent of GDP, 80 percent of employment, and 63 percent of foreign exchange earnings. It also provides 90 percent of the country's food needs. The sector, however, faces several challenges: (i) a binding land constraint that rules out extensification (bringing more and more land under cultivation); (ii) small average land holdings (0.4 ha); (iii) poor water management (uneven rainfall and ensuing variability in production); (iv) the need for greater (public and private) capacity from the district to the national levels; and (v) limited commercial orientation constrained by poor access to output and financial markets. Without the option of extensification, agricultural *intensification* must take place in the context of a potentially fertile, but challenging, physical environment. Steep terrains and the highest population density in sub-Saharan Africa (SSA) make good land husbandry a strict necessity (to curtail erosion and otherwise maintain the quality of the soil), as well as an environmental prerogative. Arable land

¹⁹ Economic Development and Poverty Reduction Strategy, Rwanda's PRSP.

²⁰ Recent analytical work (World Bank. 2007. *Promoting Pro-Poor Agricultural Growth in Rwanda: Challenges and Opportunities*. Agricultural Policy Note) confirms that improvements in sector productivity could deliver growth of about 6 percent annually through 2015, which could fuel average annual GDP growth of 6.24 percent—from agriculture alone.

²¹ Enquête Intégrale sur les Conditions de Vie des Ménages au Rwanda (EICV), 2005-06.

²² World Bank. 2008. *Country Assistance Strategy for the Republic of Rwanda*. (IBRD: Washington DC), p.6.

on hillsides constitutes almost 90% of the total agricultural land in the country.²³ Given its high dependence on rain fed agriculture, irrigation is critical to reducing the sector's vulnerability to climatic variation and to aligning the right incentives for intensification.

(b) Government Strategy and the SWAp

3. The Government has formulated a coherent strategy for the sector, the *Strategic Plan for the Transformation of Agriculture* (SPAT), recently updated as the SPAT II. The SPATs are fully aligned with the EDPRS²⁴ and Vision 2020. Rwanda's agricultural strategy, as developed by the Ministry of Agriculture and Animal Resources (MINAGRI) is aligned around four strategic axes: (i) Physical resources and food production: intensification and development of sustainable production systems; (ii) Producer organization and extension: support to the professionalization of producers; (iii) Entrepreneurship and market linkages: promotion of commodity chains and the development of agribusiness; and (iv) Institutional development: strengthening the public sector and regulatory framework for agriculture.

4. MINAGRI and Development Partners (DPs) signed an MOU establishing a Sector Wide Approach (SWAp) in the agriculture sector in December 2008, in accordance with the Paris declaration on aid effectiveness and the Accra Agenda for Action. SPAT II will be implemented through this ministerial SWAp, phasing out stand alone project implementation units (PIUs). In the place of PIUs, MINAGRI is putting into place a 'SWAp Structure' (see Annex 6), which will hire four Program Managers—one for each SPAT II program, as well as an implementation support team (procurement, financial management, M&E and others) for each program. All Program Managers report to the Permanent Secretary of MINAGRI and are responsible for the coordination of all projects under their program. Each main project or activity will also have a dedicated Contract Manager.

5. Implementation of the SWAp structure is being supported by several development partners. To assist in the implementation of this new SWAp structure, the Government of Rwanda (GoR) receives support from IFAD, DFID and Belgium in the form of loans and grants to the Support Project to the Transformation of Agriculture in Rwanda (PAPSTA), implemented by MINAGRI. PAPSTA has funded a number of diagnostic and support activities related to the implementation of the SWAp structure so far.

(c) Sectoral Context

6. A number of land issues are critical to realizing the agricultural sector's potential for growth and poverty reduction. The Rwandan population of almost ten million people is distributed across an area of only 26,340 km², giving Rwanda the highest average population density in sub-Saharan Africa (approximately 355 inhabitants per km²). Total agricultural land in Rwanda is slightly above 1.5 million ha, 90% of which are found on hillsides. The average amount of agricultural land available per rural resident in Rwanda is about 0.3 ha, and the

²³ National Agricultural policy, 2004 Kigali

²⁴ Economic Development and Poverty Reduction Strategy, Rwanda's PRSP.

average amount of arable land (agricultural land net of permanent pasture) is about 0.2 ha, which in most cases is also further fragmented into smaller plots. Some of these figures are atypical for Africa and are more comparable to those for the more densely populated countries in Asia, where a much larger share of agricultural land is irrigated. Alongside its SPAT, the Government of Rwanda has implemented important land tenure reforms through its 2005 Land Law. The Land Law secures the rights to tenure of all existing landholders, whether the hold is due to customary or written law. Implementation of titling has started, with DFiD support, and is envisioned to be completed by 2012. To facilitate greater agricultural growth, the GoR introduced a Land Use Consolidation program enabling farmers with adjoining plots of not less than 2 ha, who are willing to grow the same crop recommended for their particular zone, to do so by facilitating their access to inputs like seeds and fertilizers at affordable prices. The land consolidation program is governed by land consolidation clauses under the Land Law. Namely, that land consolidation is entirely voluntary and cannot be expropriatory.

7. Irrigation and erosion control are critical measures to relieving sectoral constraints for growth. Almost all agriculture in Rwanda is rainfed, with only 15,000 ha irrigated in the entire country. Although Rwanda enjoys good rains with annual rainfall of 900 to 1600 mm, frequent changes in the rainfall pattern and seasonal changes result in poor crop performances and increased food insecurity. Due to its hilly topographical characteristic, most agricultural land is susceptible to erosion. Fully 39% of total land in the country is classified with high risk of erosion, 38% with moderate risk of erosion and only 23% with little or no risk, but most of the latter is land found in the National Parks. Annual soil loss due to erosion amount to 1.4 million tons²⁵ of fertile soils, comprising 945 200 tonnes of organic matter, 41 210 tonnes Nitrogen, 280 tonnes Phosphorus and 3 055 tonnes of Potassium. It is estimated that this amounts to a regular loss of a capacity to feed 40 000 people per annum.²⁶

8. The agricultural sector in Rwanda is constrained by a lack of institutional and technical capacity, particularly binding in the Government's pursuit of its objectives for the professionalization and commercialization of agriculture. In particular, the recent capacity assessment of MINAGRI indicated that the existing institutional and community-level capacity for water-harvesting, hillside-irrigation, horticultural and marketing service provision is insufficient. This is confirmed by the recently concluded National Skills Audit by the Ministry of Public Affairs, which points out that the agriculture sector alone accounts for 35% of the total skills shortage in the country, with the most acute shortage valued at 60% for agricultural technicians.²⁷ While MINAGRI has qualified and experienced staff at the center, they are insufficient in number and this is even more true at decentralized levels. On the plus side, the GoR intends to proceed rapidly with its institutional development and capacity building program. At decentralized levels, very few farmers are ready for modern, intensified irrigated agriculture that targets export crops or greater commercialization. The issue of capacity building at all levels, therefore, is one of the major challenges that needs to be addressed in tandem with greater irrigation infrastructure.

²⁵ RADA information from RADA website www.rada.gov.rw

²⁶ National agricultural Policy, MINAGRI, 2004

²⁷ National Skills Audit, HIDA-MSCBP, MIFOTRA, 2009

9. At the community level, improved extension systems are required to realize Rwanda's ambitious development objectives for its agriculture sector. Under its long-term development plan (Vision 2020), the GoR has set a target of annual growth rate for agriculture of 5-6 percent. During the current EDPRS period (2007-12), the targeted average growth rate is 7 percent. The challenge for the delivery of effective extension services will have to be met in order to transform production systems currently of a low input/low output nature, into higher productivity and commercialized agriculture. Currently, farmer access to extension services is relatively limited, with a ratio of extension agents to farmers as low as 1 per 3,000 farm households. The Government, however, has recently put into place a coherent extension strategy and has laid down guiding principles that will help achieve its growth and development objectives. These principles include: (i) promotion of participatory extension system; establishment of farmers' organizations along commodity lines at all levels; (ii) use of farmer's fields for problem diagnosis; (iii) solution identification, and technology experimentation of dissemination; (iv) promotion of voluntary farmer extensionists; (v) establishment of rural innovation community centers; (vi) promotion of agricultural competition and award system; and (vii) progressive disengagement of government in favor of private extension delivery.

10. Producer organizations are a key feature of the agricultural landscape in Rwanda, with about 2,500 grass roots, district level farmers' associations and cooperatives in the country. The government has been actively promoting a policy to convert associations into cooperatives, enabling them to enter into commercial activities, and for which an enhanced regulatory framework has been established. All cooperatives are registered either through the Ministry of Justice as organizations or through the Districts as Cooperatives under the Cooperative Law. The Cooperative Law is well structured and provides clear guidelines for decision-making in cooperatives. It also includes provisions to protect the interests of members, the cooperative institution and any third parties. The recently created Rwanda Cooperative Agency (RCA) provides for supervisory and enforcement functions for cooperatives. The nation's many farmer organizations have been consolidated into seven national apexes (federations). Some apex organizations are crop specific, but cover all districts. Others operate in specific geographical boundaries within one or few districts, but are multi-crop cooperatives. There is also a national umbrella organization for all farmer organizations, the ROPARWA (Reseau des Organizations Paysannes du Rwanda). These Apex organizations carry out mostly advocacy services and to a lesser extent agricultural support services.

11. A number of weaknesses beset many farmer organizations in Rwanda. The guidelines set forth in the Cooperative Law cater for a wide range of different types of (urban and rural, financial and productive) cooperatives with different membership bases. As a result, some of the guidelines have been difficult to apply for farmers' cooperatives, where education and knowledge on legal provisions is particularly weak. For instance, farmers' cooperatives still struggle with issues affecting leadership, allowing leaders to remain in office for more than the terms allowed by the law or by failing to take punitive action when leaders have mismanaged the cooperative, despite clear legal provisions for such. Weak management has also been reported²⁸ as key to the poor performance of many organizations. Failure of leaders to address the pressing needs of members such as farm input supply, quality seeds and technical advice progressively

²⁸ "Evaluation of Apex Organizations" by HTSPE Limited. October 2008

lead to their alienation from members. In many cases, either the leadership does not have sufficient qualification to manage a business, or their qualification and experience are not relevant for the type of expertise required to manage a farmers' organization. This further contributes to the prevalent risk aversion towards engaging into provision of commercial services that they consider too risky. This situation is perpetuated due to lack of pressure from members for such services. The weakness of many organizations stems from the process by which they are formed. Some have been formed by people in order to tap into the flow of donor funds, especially after the war, or due to strong policy pressure for cooperative formation. Such processes do not allow for cooperative formation to be grounded in the community members.

12. Parallel activities concerning rural infrastructure are critical to meeting the agricultural sector's objectives. The Government of Rwanda is leading a nationwide initiative to extend access to electricity. It is assisted in by the Bank's pipeline project on Electricity Access Scale-Up, which will help trigger the launch of the national electricity rollout program (NERP). These activities are in aid of realizing the primary EDPRS target of tripling access by 2012 to about 16 percent of households and at least 50 percent of identified public institutions in health, education, agriculture and local administration. In transport, financing for rural roads will complement support to improved productivity in agriculture and rural development. To this end, the current CAS for Rwanda has earmarked USD25 million for a rural roads operation. Discussions with the Bank's roads team have started to enable close coordination with the programs and priorities of the agricultural sector, through MINAGRI.

13. Finally, access to finance remains one of the central constraints on growth in the sector.²⁹ While much has been accomplished in terms of laying the groundwork for financial broadening and deepening in Rwanda through recent financial sector reforms, the challenges to rural access to finance remain daunting. A household survey, completed in December 2008 by FinScope empirically underlines the low level of rural and agricultural finance in Rwanda. A much higher proportion of rural inhabitants have never been banked, compared to their urban counterparts.³⁰ While agriculture represents 40 percent of GDP and 80 percent of employment, it constituted just 5.4 percent of credit to the economy in 2007. The obstacles to rural access to finance, including credit, can be grouped in three clusters: (i) inappropriate and inadequate range of products offered to rural clients; (ii) perceived high risks in primary agricultural production; and (iii) very poor financial literacy resulting in insufficient capacity and linkages by producer organizations with agribusinesses and financial institutions. In response to the above challenges, Government is putting in place a policy on microfinance and a related microfinance law to improve the structure and accountability of MFIs. The policy is generally sound and in line with international good practice. Furthermore, a number of development partners are investing in MFI organizational strengthening. While this is an essential condition to good rural finance, a large gap remains with respect to good product development—including risk reduction mechanisms—and financial literacy for rural people.

²⁹ Recent analytical work (World Bank. 2007. *Promoting Pro-Poor Agricultural Growth in Rwanda: Challenges and Opportunities*. Agricultural Policy Note) confirms that improvements in sector productivity could deliver growth of about 6 percent annually through 2015, which could fuel average annual GDP growth of 6.24 percent—from agriculture alone.

³⁰ FinScope. 2008. *FinScope Rwanda Data Book*.

(d) The Government's (LWH) Program

14. To address the critical agenda of hillside intensification, the Government designed and developed a Land Husbandry, Water Harvesting and Hillside Irrigation Program under Program 1 of its SPAT. In March 2008, MINAGRI presented the LWH Program—including a detailed site-level technical proposal—to development partners in the Rural Sector Cluster. The LWH Program, as conceived by Government, is a two-phased program to implement improved land-husbandry and increased productivity in 101 pilot watersheds covering 30,250 ha of land. The first phase was to cover the development of 32 sites, permitting a learning process before the second phase, which would see the completion of the program through the remaining 69 sites. It envisions some 12,000 ha of the 30,250 ha total to be irrigated. It is expected that a number of development partners will each finance a slice of the overall program, which therefore calls for strong programmatic guidance by the Government to ensure coherence, complementarities and adherence to a common approach, including safeguards. The Government has therefore expressed its desire to have key development partners help in formulating a Common Framework of Engagement for investments in LWH. Such a framework would include technical specifications, economic and financial analysis guidelines, a safeguards framework, common approaches to community engagement, and common socio-technical site selection criteria. Working with key partners, the present World Bank-funded Project would assist the Government in the formulation of that framework, and then undertake a first phase of its use in investment through the development of a number of sites under the LWH.

Annex 2: Major Related Projects Financed by the Bank and/or other Agencies
RWANDA: Land Husbandry, Water Harvesting and Hillside Irrigation Project

Sector Issue Addressed	Project Status	Latest Supervision (ISR) Ratings	
		Implementation Progress (IP)	Development Objective (DO)
Integrated Management of Critical Ecosystems <i>Sectors: Agriculture, Forestry</i>	Ongoing	MS	MS
Rural Sector Support Project Phase 2 <i>Sectors: Marshland development, SWC, rural infrastructure, extension, marketing</i>	Ongoing	S	S
Second Rural Investment Facility (RIF 2) (PRSG V)	Ongoing	N/A	N/A
Rwanda Electricity Access Scale-Up Project	pipeline	N/A	N/A
Rwanda Rural Roads	pipeline	N/A	N/A
Other agencies			
IFAD / DFID / MINAGRI – PSTA Support Project (PAPSTA) <i>Sectors: Agriculture, Forestry, Central Government Administration (SWAp)</i>	Ongoing	N/A	N/A
DFID			
<i>Rwanda Land Reform Programme Phase 1</i>	Completed	N/A	N/A
<i>Rwanda Land Reform Programme Phase 2</i>	Ongoing	N/A	N/A
IFDC			
<i>Warrantage System Program</i>	Ongoing	N/A	N/A
World Food Program	Ongoing	N/A	N/A
<i>Purchase for Progress Program</i>			

Sector Issue Addressed	Project Status	Latest Supervision (ISR) Ratings	
		Implementation Progress (IP)	Development Objective (DO)
African Development Bank / MINAGRI - Dairy Cattle Development Support Project (PADEBL) <i>Sector: Agriculture</i>	Ongoing	N/A	N/A
African Development Bank / MINAGRI - Bugesera Agricultural Development Support Project <i>Sectors: Food security, agric development, irrigation, SWC, inputs (seeds), PO's, rural infrastructure (agro-processing, post-harvest)</i>	Ongoing	N/A	N/A
Belgium - Development of Seed Production Capacity <i>Sector: Agriculture</i>	Ongoing	N/A	N/A
Belgium- Project for Support to National Extension Services <i>Sector: Agriculture</i>	On going	N/A	N/A
IFAD – Kirehe Community-based Watershed Management Project (KWAMP) <i>Sector: Agriculture, Community Development</i>	Ongoing	N/A	N/A
STABEX			
Radical terraces <i>Sector: SWC, radical terracing</i>	On going	N/A	N/A
STABEX: Appui aux projets de diversification <i>Sector : Crop diversification, export promotion, M&E, development crop varieties</i>	Completed	N/A	N/A
Royal Netherlands Embassy: Cold Storage Facilities <i>Sectors: Rural infrastructure, cold storage, cold chains, horticultural export, produce quality, PO's</i>	Completed	N/A	N/A
Royal Netherlands Embassy /ISAR :	Completed	N/A	N/A

Sector Issue Addressed	Project Status	Latest Supervision (ISR) Ratings	
		Implementation Progress (IP)	Development Objective (DO)
Commodity chain development research programme			
<i>Sectors: Agric research, commodity chain for potatoes, horticulture, wheat, cows milk production, rural infrastructure</i>			
GEF/UNDP	On going	N/A	N/A
Sustainable LU Management Project			
<i>Sectors: Sustainable land use, SWC, extension services, policy & planning</i>			
Belgium	Ongoing	N/A	N/A
Improvement of access of farmers to quality plant materials for roots, tubers and fruit crops			
<i>Sectors: Crop production, roots & tubers, multiplication, input supply, extension, cooperatives</i>			
WTO	Ongoing	N/A	N/A
Rwanda Horticulture Export Standards Initiative			
<i>Sectors: Horticultural export, export standards</i>			
GoR: Masterplan for the Development of Irrigation in Rwanda	ongoing	N/A	N/A
<i>Sectors: Irrigation development, master plan preparation</i>			
USAID through World Vision Development Activity Programme	Completed	N/A	N/A
<i>Sectors: SWC, radical terracing, PO's, food security, extension & proximity services</i>			
Royal Netherlands Embassy project with Helpage	Ongoing	N/A	N/A
<i>Sectors: SWC, rural infrastructure</i>			

Annex 3: Results Framework and Monitoring
RWANDA: Land Husbandry, Water Harvesting and Hillside Irrigation Project

Project Development Objective	PDO Indicators	Use of Outcome Monitoring
The Project Development Objective (PDO) is to increase the productivity and commercialization of hillside agriculture in target areas	1. Increase in Productivity of targeted irrigated command area (\$/ha)	These indicators will show if farmers have adopted improved technologies that result in increased productivity; and also show if productivity gains improve farmer incomes
	2. Increase in Productivity of targeted non-irrigated hillsides (\$/ha)	
	3. Increase in share of commercialized products from target areas (%)	
Intermediate Outcome for each Component Component A Capacity and Institutional Strengthening for Hillside Intensification and Commercialization <ul style="list-style-type: none">Improved hillside land husbandry technologies and techniquesStrengthened value chains for agricultural productsExpanded access to rural finance Component B Infrastructure for Hillside Intensification <ul style="list-style-type: none">Improved infrastructure for hillside agriculture	Outcome Indicators for Components	Use of Outcome Monitoring
	4. Increased revenues made by cooperatives in project areas	To assess the market/business orientation of farmers' organizations
	5. Cost recovery ratio for operation and maintenance of WUA in project areas	To assess the sustainability of irrigation infrastructure
	6. Proportion of farmers in project affected areas using improved farm methods (disaggregated by gender)	To assess if extension strategy is successful
	7. Percentage of total adult population in the project affected areas which use the services of formal financial institutions (disaggregated by gender)	To assess if access to financial services is being increased
	8. # of project participating financial institutions (PFIs) using new products	To assess if the needed financial products to increase access to finance are being used
	9. Proportion of land protected against soil erosion in project areas (ongoing assessment each year)	To assess the improved infrastructure developed by the project
	10. Area developed for Irrigation in project (ha)	To assess the improved infrastructure developed by the project
	11. Reduced annual soil loss in project areas (MT/ha)	To assess the environmental benefits and sustainability of Project SLM activities

Arrangements for Monitoring and Evaluation of the Results Framework

	Baseline	End of Project	Target Values				Data Collection and Reporting			Observations and Comments
			YR1	YR2	YR3	YR4	Frequency of Reports	Data Collection Instruments	Responsibility for Data Collection	
Project Outcome Indicators										
1. Increase in Productivity of targeted irrigated command area (\$/ha) ³¹	1000	1700	200 (see comment)	1200	1400	1700	Annually	Survey and Coop reports	LWH M&E	Current production levels (baseline) will dramatically fall in Year 1 due to infrastructural and levelling work. However, farmers will get additional income through wages in land husbandry work.
2. Increase in Productivity of targeted non-irrigated hillsides (\$/ha)	1000	1400	800 (see comment under 1 above)	1000	1200	1400	Annually	Survey and Coop reports	LWH M&E	Data on mt/ha on crops eventually selected will also be available to report to MINAGRI ³²
3. Increase in share of commercialized products from target areas (%)	35%	60%	30%	45%	55%	60%	Annually	Cooperative M&E Committee Report	MINAGRI and LWH M&E	Data on mt/ha will be available to report to MINAGRI This indicator does not include the water catchment area. ² The share will be calculated based on the value in \$ of the production and the marketed share of it (%) ²

³¹ Note that project end reflects the period when irrigated cultivation is just taking off. The difference in productivity gains by the 5 or 6 year mark will be markedly higher.

³² Data is based on self assessment of farmers. In the future the data will also be triangulated with data from cooperatives that will be created by the project. This will improve data quality but may also show some difference in values. This comment applies to all PDO indicators.

			Target Values				Data Collection and Reporting			Observations and Comments
	Baseline	End of Project	YR1	YR2	YR3	YR4	Frequency of Reports	Data Collection Instruments	Responsibility for Data Collection	
Intermediate Outcome Indicators										
Component A: Capacity development and Institutional Strengthening for Hillside Intensification										
4. Increased revenues made by cooperatives in project areas	Year on year increase	50% increase from YR1 revenues	Collection of baseline coops revenues(BR)	BR+15%	BR+30%	BR+50%	Annually	Cooperative M&E Committee Report	LWH M&E	Revenues would include revenues from several sources e.g. sales, services etc.
5. Cost recovery ratio for operation and maintenance of WUA in project areas ³³	N/A	40%	N/A	N/A	20%	40%	Bi-annual	LWH progress report	LWH M&E	Data will be available by site as well
6. Proportion of farmers in project affected areas using improved farm methods (disaggregated by gender)	Male=30 Female=25	M = 90% F = 90%	M = 50% F =50%	M = 70% F =70%	M = 80% F = 80%	M = 90% F = 90%	Annually	Survey	MINAGRI	Improved farm methods are defined as follows: improved planting materials, IPM, soil fertility management, conservation tillage, agro-forestry interventions, intercropping with plant cover and green manuring, apply manure/compost & mulching, liming
7. Percentage of total adult population in the project affected areas which use the services of formal financial institutions (disaggregated by gender)	M = 22.0 F = 17.6	M = 40 F = 36	M = 26 F = 22	M = 30 F = 26	M = 35 F = 31	M = 40 F = 36	MTR and End-of-project	Survey based on FinScope methods	MINAGRI	

³³ On the assumption of best practice full cost recovery (100%) over five years, assuming the irrigation scheme will be up and running

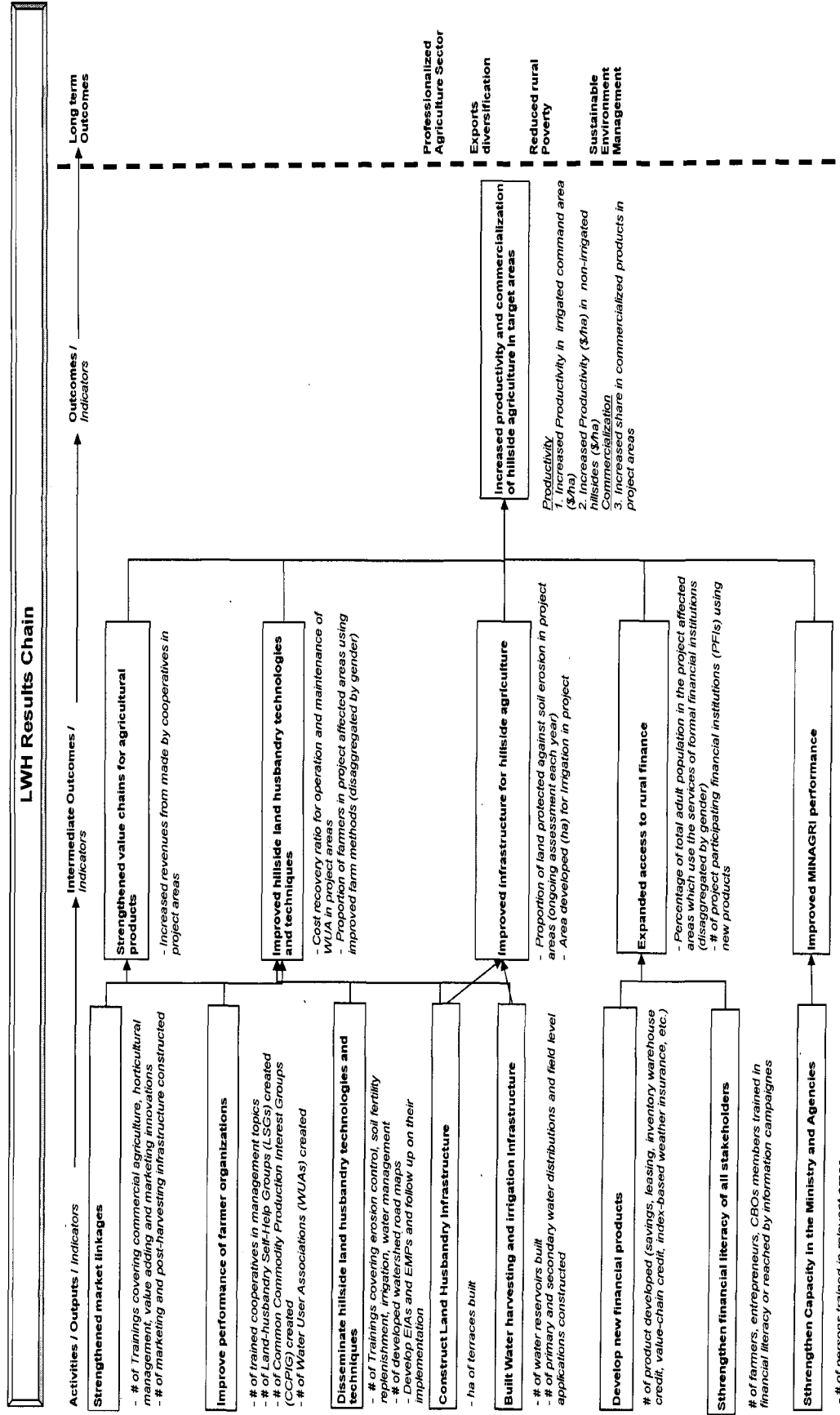
			Target Values				Data Collection and Reporting			Observations and Comments
			YR1	YR2	YR3	YR4	Frequency of Reports	Data Collection Instruments	Responsibility for Data Collection	
8. # of project participating financial institutions (PFIs) using new products	N/A	12	0	3	6	12	Bi-annual	LWH progress report	LWH M&E	Based on a count of PFIs per sector; two SACCOs or credit unions belonging to the same network but located in two different sectors are counted as two PFIs
Component B: Infrastructure for Hillside Intensification										
9. Proportion of land protected against soil erosion in project areas (ongoing assessment each year)	44.5%	80%	50%	60%	70%	80%	Bi-annual	MINAGRI data and/or Survey	LWH M&E	Land protection methods are defined as follows: grass strips/trash lines, agro-forestry interventions, intercropping with plant cover and green manuring, construction of soil bunds, planting trees supporting bunds, construction of radical or progressive terraces, construction of micro-basins with tree planting, reforestation
10. Area developed for Irrigation in project (ha)	0	900	0	0	350	900	Bi-annual	LWH progress report	LWH M&E	No irrigation is expected in YR1 and YR2 due to tendering and dam construction activities.
11. Reduced annual soil loss in project areas (T/ha)	Q	0.5 Q	Amount of soil loss from project site (T/ha) = Q	10% as compared to control farms	30% as compared to control farms	50% as compared to control farms	Annually	LWH progress report	LWH M&E	Pin method will be used within the project area and in control farms across various slope categories, soil loss reduction will be calculated on seasonal and annual basis.

Arrangements for Results Monitoring

1. The monitoring and evaluation (M&E) system for the Project will be in line with the proposed implementation structure of the Project and therefore fully embedded into the MINAGRI M&E system. The new SWAp structure in MINAGRI (see Figure 6 in Annex 6) envisions three levels of M&E activity. First, there is one lead M&E specialist in the Policy, Planning and Coordination Unit: The MINAGRI Management Information System (MIS) Specialist. The MIS Specialist oversees the overall MIS of MINAGRI. In this, the MIS Specialist coordinates with MINAGRI's M&E Statistician, whose oversight includes the new market information system (eSoko). The Country STATA, a FAO developed tool, will support the systematic capturing of agricultural data and post it to the MINAGRI web site for dissemination. The new SWAp structure then has one M&E Officer for each of the four major programs of the SPAT, including that of the LWH, Program 1. Finally, the LWH District Implementation Support Team will also have an M&E Assistant to support the site-level M&E activities.
2. The M&E Coordinator of Program 1 will coordinate data collection and reporting for all activities in the Program and will be assisted in this at the decentralized levels by the M&E assistants recruited for the Districts in which LWH operates. In each district, s/he is assisted in this by an agronomist collecting data from the different producer organizations. This decentralized data collection structure will allow LWH to benefit from the provided information and avoid duplication in structures. The links between the Project and the MINAGRI system will assure a better use of LWH data and will support timely and informed decision making regarding the achievement of project objectives, without creating parallel M&E systems, in line with the SWAp.
3. The M&E capacity at MINAGRI will be of key importance to ensuring that data will be available to track progress and to adjust project activities. To this end, the Project will support the capacity development of the structure mentioned above (Component C); in coordination with similar activities from the PAPSTA project. That is, the three levels (District M&E Assistant, Program 1 M&E Coordinator and MINAGRI MIS Coordinator) will be strengthened through the Project. In this way, the Project contributes to establish the needed capacity not only for the implementation of LWH, but also for the overall functioning of MINAGRI in the future, in support of the SWAp.
4. The Project has developed with Government a common set of results- based indicators that are reflected in the Results Framework (see above). With the exception of the additional rural finance indicators, the Project's Results Framework is that of the CFE for the whole Government LWH Program. Indicators are in line with EDPRS and sector strategies, including two indicators that will be disaggregated by gender. By establishing gender specific baselines and targets, the Project will ensure that women and men benefit equally from the operation. Deviations in this regard could be addressed by specific interventions if needed. Beside the gender disaggregated indicators in the Results Framework, the project will also be collecting additional disaggregated data that will inform Project management on a more day-to-day basis, e.g. training provided for men/women. Furthermore the team developed a results chain to show the intervention logic from activities to outcomes.

5. The LWH M&E system and arrangements will incorporate additional elements to strengthen data collection and use of M&E information. This includes the establishment of a link between the LWH Results Framework M&E and the GIS based dynamic information framework (LWH DIF); which will be set up at MINAGRI under LWH. Data collection and data verification could partially be done in a joint exercise with local communities and cooperatives. This participatory approach would not only improve data quality of the GIS system but would also open the opportunity to better use of the data and projections of the GIS by farmers and cooperatives on the ground.

Figure 2 LWH Results Chain



Annex 4: Detailed Project Description

RWANDA: Land Husbandry, Water Harvesting and Hillside Irrigation Project

6. **The Land Husbandry, Water Harvesting and Hillside Irrigation (LWH) Project uses a modified watershed approach to introduce sustainable land husbandry measures for hillside agriculture on selected sites, as well as developing hillside irrigation for sub-sections of each site.** The Project envisions the production of high-valued (organic) horticultural crops with the strongest marketing potential on irrigated portions of hillsides, and the improved productivity and commercialization of rainfed crops on the rest (the majority) of the site catchment area hillsides. It represents a transformation of hillside intensification with a view to increasing productivity in an environmentally sustainable manner. As with all transformation, it requires high levels of participation and ownership by women and men in the project areas. As such, throughout the Project description below, the Project will use participatory land use processes³⁴ to promote high level stakeholder involvement, and to build awareness and empower women and men of the community to enhance their buy-in for the comprehensive land management work. The LWH Project has two components aimed at (A) developing the human and organizational capacity and (B) the required physical infrastructure for hillside intensification and transformation, as well as a third component (C) for SWAp Project management.

Component A:

Capacity Development and Institutional Strengthening for Hillside Intensification

US\$13.85 million (US\$12.12 million IDA, US\$1.50 million USAID, US\$0.12 million GoR, US\$0.11 million beneficiaries)

7. **The objective of Component A is to develop the capacity of individuals and institutions for improved hillside land husbandry, stronger agricultural value chains and expanded access to finance.** Using a value chain approach to the Project's PDO, Component A covers the capacity development and institutional strengthening for both production and marketing, including the access to finance issues that can constrain both.

8. **Component A will include four sub-components:** A1 Strengthening Farmer Organizations; A2 Extension; A3 Marketing and Finance; and A4 Capacity Development and Institutional Strengthening of MINAGRI and its Agencies. To facilitate the achievement of the PDO, the institutional strengthening activities under A1 and A4 below must be prepared as early in Project implementation as possible. This component will finance technical assistance, training workshops and meetings, surveys and studies, works related to post-harvest infrastructure, and goods.

³⁴ Six steps in preparation were identified during the technical mission in November 2008, which include (a) sub-watershed selection based on pre-defined criteria (as per the Government's common framework for engagement); (b) formation of a multi-disciplinary planning team, with participation of key stakeholders, such as farmers' representatives, district officers and entrepreneurs, local experts; (c) community communication and sensitization, based on developed communication strategy; (d) detailed socio-economic and technical survey and analysis; and (e) drafting plan; and (f) community feedback and plan finalizations.

Sub-component A1: Strengthening Farmer Organizations

9. **The success of the Government's hillside intensification objectives largely hinges on strong ownership and engagement of farmers in production and marketing activities,** particularly given the nature of decentralization in Rwanda. This requires solid farmer-based institutions both at the local, provincial and national levels. Unprecedented and imperative technical challenges will be addressed through the Project, ranging from managing terraces, to proper land husbandry and to the maintenance of (virtually unknown) hillside irrigation schemes. Sustained provision of adequate technology and technical advice will require both supply push (in terms of good extension services—see A2 below) and demand pull for those services, which can only come from well managed farmers' organizations, particularly at the local level. In marketing and other commercial activities, crop specific or provincial and national level (apex) organizations also have an important role to play, in collaboration with the private sector and the government. Such a role—and the implications for support and training—is carefully assessed and costed using a PPF-financed diagnostic on farmer organizations in order to ensure the Project's successful support of these aspects.

10. **The Project will strengthen farmer organizations and cooperatives for sustainable hillside intensification** by assisting the Government in the organizational diagnosis, capacity building and institutional strengthening required for increasing the productivity and commercialization of agriculture in the targeted areas. Many of the agricultural organizations in Rwanda are beset by a number of weaknesses. In particular, the institutional diagnosis undertaken of farmer organizations for the Project identifies a number of particular areas in need of support that can be classified into three categories: (i) governance; (ii) management; and (iii) market orientation. What is observed regarding governance in Rwandan farmer organizations concerns primarily the ability of women and men to assert their rights and responsibilities in the affairs of their organization. The guidelines set forth in the Cooperative Law cater for a wide range of different types of (urban and rural) cooperatives with different membership bases. As a result, some of the guidelines have been difficult to apply for farmers' cooperatives, where education and knowledge on legal provisions is particularly weak. The weakness of many organizations in this regard stems from the process by which they are formed. Some have been formed by people in order to tap into the flow of donor funds, or due to enthusiastic execution of policy for group formation. This sub-component will address the key weaknesses and constraints identified for farmer organizations in the area of governance. While some identified weaknesses could be served by changes in the policy framework,³⁵ in the more immediate term, the Project will support the introduction of effective mechanisms to ensure that women and men of the cooperative are educated on their roles in the decision making process, and their responsibility to participate in the management of the affairs of the organization. Where *creation*

³⁵ For example, one way forward for addressing the 'founders syndrome' that besets some farmers' cooperatives might be to introduce legal provisions that *inter alia*, set minimum eligibility criteria for member of Board and supervisory committees so as to reduce the incidence of leadership clinging on even after they have outlived their usefulness.

of organizations is necessary for LWH,³⁶ particularly at the local level, support for such would be designed so as to foster much needed ownership by female and male grassroots members.

11. The Project will build capacity for sound organizational management of participating farmer organizations. The institutional diagnosis of farmer organizations undertaken for the Project confirms the need for capacity building in multiple aspects of good organizational management, including basic record keeping, financial management and more strategic staffing decisions. Furthermore, grassroots farmer organizations demonstrate a need for: strategic planning (as opposed to un-costed and unplanned wish lists); greater orientation towards profit and service provision for members; capacity for innovation; and better organization for maintenance of infrastructures. At the provincial or national level, the very institutional framework of apex organization for farmer organizations needs better articulation and support, particularly for provision of market information services to member organizations and commodity marketing functions (see below). The Project can support the Government in these activities where they concern the apex organizations most relevant to LWH crops and activities.

12. The Project will finance the building of entrepreneurial capacity of apex and local farmer organizations for successful hillside intensification and marketing. While sub-component A2 (see below) will provide for the essential training activities required to build the competence and appreciation of female and male members for improved sustainable land-husbandry and commercial agriculture, some of their organizations will need to be similarly strengthened for the essential marketing. The diagnosis on farmer organizations indicates that even where organizations have tried to engage in marketing activities, their limited (negotiation) skills and appreciation for market demands (information failure) curtail their efforts. The Project will finance activities that foster their awareness and competence for engagement in markets. It will also support a clarification of roles of the apex organizations in supporting marketing activities including: linking producers with buyers, oversight on value chain quality and market demands and specific information on agro-markets.

Sub-Component A2: Extension

13. The demand for extension services under the LWH is considerable. The LWH project calls for a holistic approach to watershed management. It involves several technical and technological challenges, ranging from construction and management of terraces to the development of appropriate land husbandry practices for both rain-fed and irrigated agriculture, as well as for both annual and perennial crops. It also involves knowledge and understanding of phytosanitary issues and will call for very specialized and intensive horticultural technical assistance for the irrigated command areas. Several actors or institutions are involved in the delivery of extension services, including MINAGRI, specialized agencies of MINAGRI, the decentralized local administration, farmers' organizations, NGOs, the private sector, agricultural education institutions, and agricultural research institutes. While the seven guiding principles of

³⁶ Early in Project implementation, farmers will, on a number of sites, need to be mobilized and assisted to formulate Land-husbandry Self-Help Groups (LSGs), Common Commodity Production Interest Groups (CCPIG) and Water User Associations (WUAs).

the Government's sound extension strategy³⁷ are entirely in the right direction, to translate them into operationally meaningful actions will require addressing many of the weaknesses and threats presented in Table 3 below.

14. **As part of Project preparation,³⁸ the Government has launched a consultancy to formulate the design for extension services for the LWH.** In identifying the shortfalls of existing extension services for the LWH, the preliminary report places a strong emphasis on the need to: (i) actively support the development of the demand side of extension services through sensitization and intensive communication to targeted farmers on project objectives, their mobilization and the empowerment of their grass-root institutions; (ii) improve the supply side of extension delivery by building a well established coordination framework that links farmers, decentralized technical entities and other non government actors vertically up to the Project Secretariat at MINAGRI, as well as horizontal coordination with other stakeholders such as private input suppliers and NGOs; and (iii) develop extension themes focusing on (a) land-husbandry practices in sub-watershed setting;³⁹ (b) downstream reservoir protection and development support; and (c) water harvesting and conveyance.⁴⁰

15. **The Project will finance activities to address the key extension issues most critical to the success of LWH objectives.** In particular, the Project will finance the implementation arrangements necessary for an extension delivery system that incorporates the key observations of the diagnostic conducted for the LWH. Namely: (i) setting up a common framework for "participatory extension" that would cover problem diagnosis, solution identification, and experimentation of possible technologies or practices; (ii) defining a clear organizational mechanism by which periodic interactions (face to face and mass communication) are planned and held between farmers and extension agents; and (iii) defining approaches for evaluation and validation of results following adoption of new technologies and practices. The results of the diagnostic would be discussed extensively among key stakeholders as part of the project communication strategy for the LWH extension sub-component. This sub-component will finance additional staffing needs, mobility costs, training, communication and sensitization campaigns, and necessary equipment. As per the findings of the horticultural marketing study undertaken for the LWH, the Project will also finance extension activities related to pest disease monitoring, identification and reporting, as well as Good Agricultural Practices (GAP) know-how, essential for external Global GAP certification for horticultural export. Finally, in addition to the extension activities described, very specialized and intensive hands-on technical assistance for horticultural products of the irrigated command area will be necessary for at least the first year of horticultural cultivation under the LWH.

³⁷ Seven principles: (i) participatory extension; (ii) commodity chain approach at the community, district, and national (federations) levels; farmers participation in diagnosis, solution identification, and experimentation of technologies; (iii) voluntary farmer extension officers ; (iv) establishing rural innovation community centers; (vi) organization of agricultural competition ; (vii) progressive disengagement from extension service in favor of private extension delivery.

³⁸ To be financed by the project preparation fund (PPF).

³⁹ Expected results include: halting of soil erosion through control of water run-offs, providing plant cover, and improve crop and livestock productivity, forage feed development, mulching and manure application and other practices aimed at minimizing soil and water loss.

⁴⁰ The expected results include sustained crop and livestock production throughout the year. This will subsequently lead to increased crop productivity and output for market.

16. **The Project activities will support the institutional dimension** of extension (see also A1), including (i) adequate representation of farmers, organized by relevant criteria (e.g. by commodity or by water-user status); (ii) clarification of the specific role and accountability of MINAGRI and its agencies, of Local Authorities and of other nongovernmental players, and of international entities to help fill gaps on specialized expertise; (iii) clarity on the role of institutions involved in input marketing and under what specific arrangements they may or may not be involved in extension services.

17. **The Project activities will support the organizational dimension** of extension delivery for the project, including the use of performance contracts. This support will address a number of issues. First, it addresses the critical issue of tracing accountability. This is particularly important for the LWH Project because of the multiplicity of actors traditionally involved in extension services, and who may be related with one another either functionally or hierarchically. Second, adequate availability and management of logistics is an important element for implementation of program activities. The lack of mobility (and motivation) of extension agents referred to in the results of the SWOT analysis (see Table 3 below) would be given proper consideration. Third, the approach to extension delivery will be specified, i.e. whether by watershed/site, and/or along commodity lines.

18. **Finally, the Project will ensure satisfactory coverage of the human resource** requirements for proper implementation of the Project. The project basically aims at a radical transformation of production systems which calls for a clear vision of where one wants to get and how to get there. Expertise on technical, economic, and social aspects must be brought to bear on the extension delivery system in a coordinated manner. Training and extension materials covering erosion control, soil fertility replenishment, irrigation, water management, commercial agriculture, horticultural management, value adding and marketing innovations should be developed, printed and distributed as part of this support.

Table 3 SWOT Analysis of the Extension System in Rwanda

Strengths	Weakness
<p>-Existence of many Farmers organizations, NGOs and Projects as service providers;</p> <p>-Qualified extension workers at District and Sector level (although numbers are insufficient);</p> <p>-Existence of some infrastructure to support extension services (training centres, storage infrastructure, etc);</p> <p>- Many trained and innovative farmers in the country.</p>	<p>-Local authorities which do not understand agricultural policy or do not consider agricultural sector as a priority;</p> <p>-Lack of extension training material for extension workers and farmers;</p> <p>-Lack of training for extension workers at District and sector level;</p> <p>-Lack of means of work for extension workers (means of transport, GPS, veterinary kits, computers, etc.);</p> <p>-Low organisational and technical capacity of existing farmers organizations;</p> <p>-Media which are not sufficiently used in extension messages delivery;</p> <p>-Absence of functional relationship between MINAGRI and extension workers at District and</p>

	<p>Sector level (e.g. no mechanism of feedback)</p> <ul style="list-style-type: none"> -Local authorities and extension workers do not practice on their own farms what they preach; -Good quality seeds are insufficient on input markets ; -Farmers do not appreciate the use of good quality seeds and continue to use seeds of bad quality, even when seeds of good quality are available; -Farmers have poor access to finance; -Farmers don't know where they can find service providers; -People trained to help farmers to prepare eligible projects in banks are insufficient; -Lack of agricultural competitions (<i>concours agricoles</i>) to stimulate farmer competition.
Opportunities	Threats
<ul style="list-style-type: none"> - Good governance and political will to develop agricultural sector; -Good national agricultural policy; -Good resettlement policy (Umudugudu) policy ; - A network of micro finance institutions distributed in all Districts; -Experience of Ubudehe, which is a good example on which can be built the participative extension approach in agricultural sector; - Agricultural Education Institutions (UNR, ISAE, KIST); -Increasing small agro processing units; -Communication facilities (Several radios, newspapers, ICT); -Facilities given to local communities to take part in decision-making in the context of decentralization and good governance; 	<ul style="list-style-type: none"> -Local authorities don't consider agriculture as a priority; -Local authorities and extension workers do not practice on their own farms what they preach; -Lack of motivation for Extension workers; -Lack of functional relationship between MINAGRI and decentralized extension services; -Public extension workers at District and Sector level are diverted from their main task which is agricultural service delivery; -Resistance to change by the farmers ; -Insufficiency of extension workers, in particular veterinary specialists; -The research confined in experimental stations and not enough done in farmers fields; -No certified seeds sold at the same price as certified seeds; -Insufficiency of public financing granted to agricultural sector; -Agricultural inputs are expensive compared to the purchasing power of the farmers; -Climatic risks (especially in the East and the South); -Lack of insurance scheme in agricultural sector; -Farmers can not fill eligibility criteria to access to bank credit; -Lack of consultation platforms between all stakeholders in agricultural sector; -Good quality seeds are not enough on agricultural

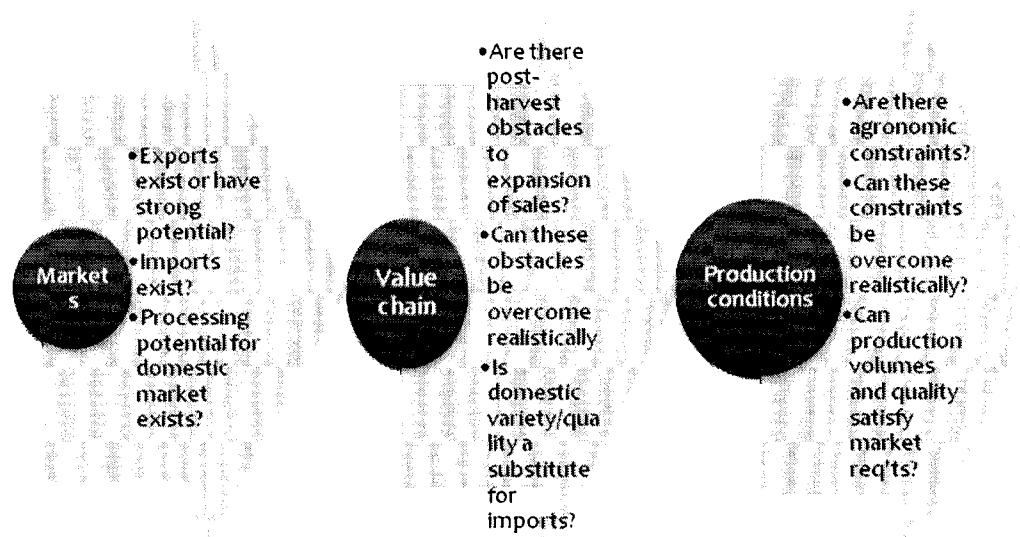
<ul style="list-style-type: none"> -Existence of a good policy for Cooperatives promotion; - Organisation of some agricultural shows; - Political stability in the country; -Good climatic conditions favourable to agriculture, especially in the north and the west; - The use of one mother tongue understood by everyone <p>Opportunities for expansion on regional and international markets.</p>	<p>input markets</p> <ul style="list-style-type: none"> -High density of population; -Land locked country; -Political instability in the sub region; -Gacaca courts take part of time that farmers should devote to agricultural works;
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Sub-component A3: Marketing and Finance

19. **The Project will finance investments in marketing infrastructure and build the capacity necessary to address the challenges surrounding successful horticultural development.** Previous analytical work⁴¹ covering high value crops in Rwanda has amply demonstrated the country's excellent agro climatic potential for the production of a wide variety of fruit and vegetables, as well as the challenges in doing so. The Government places substantial emphasis on horticultural production in their agricultural commercialization strategy of the SPAT II, primarily through the LWH. Basic prerequisites to success, however, include the existence of solvent markets (i.e. market demand), an adequate post harvest infrastructure to minimize post harvest losses, and favorable market access conditions. The Project addresses the challenges that have been identified, in the first instance, by financing a study to identify crops that not only meet the appropriate agronomic conditions for cultivation (which were well articulated in the government's original proposal), but also that have viable markets. Since successful value chains begin with market demand, the participatory crop selection described in sub-component B3 below will pass through three filters, applied in a sequential manner to each crop under consideration. These filters and the crop selection process described here form part of the LWH Common Framework for Engagement. The first of these filters concerns market demand and the second the (post harvest) marketing dimension. The third filter is agronomic:

⁴¹ *A New Horticulture Strategy for Rwanda*, OTF, June 2006.

Figure 3 LWH Crop Filters



20. The study also identifies the critical factors and constraints for success in growing, post-harvest managing and marketing of those crops and which investments might relieve these (see activities description below). The key constraints to realizing Rwanda's substantial potential in selected horticultural sub-sectors include:

- *Linkages between buyers and sellers:* Alliances between buyers (and processors) and producers need to be strengthened. Positive examples in the region exist (e.g. East Africa Growers' Association) and can be replicated. Market linkages have proven particularly important for small farmers;
- *Quality:* Quality is the most pervasive concern for horticultural success and includes: good agricultural practice (GAP), disease control, post-harvest handling procedures, in some cases, the use of cold chain facilities, product and process certification, etc. In addition to classic farmer extension, intensive, hands-on technical assistance over several years is required;
- *Post harvest infrastructure:* Critical infrastructures include coolers and dryers at the field level, cold chain facilities, greenhouse or tunnels and improved rural access roads;
- *External certification:* Financial and technical assistance for obtaining external certification (e.g. organic, GAP, etc.) will be important for smallholder farmers to penetrate viable markets.

21. **The Project will meet these key constraints through a variety of investments and active linkages with other operations.** The Project will finance the following activities: (i) fostering linkages among entrepreneurs and smallholder organizations; (ii) providing supplementary intensive quality technical assistance and external certification; and (iii) building the required post harvest infrastructure to ensure the proper handling of the produce and

exploiting processing potential. Sub-component A4 will support the necessary enabling regulatory environment for horticultural marketing and export (see below). For other critical complementary issues of (a) electrification and (b) rural access roads, the Project will actively link with ongoing operations and investments in the country. In particular, agreement has already been reached with the World Bank Electricity Access Scale-Up operation for electrification of sectors in which the LWH sites selected for development will operate. Discussions have started with the World Bank Rural Roads (FY10 pipeline) operation for similar coordination. Outside the Bank, the Project Team is actively in discussion with USAID on their nascent feeder roads investment to explore the possibility of coordinating investments.

22. The Project will foster linkages between entrepreneurs and small holder organizations. Those countries in sub-Saharan Africa (SSA) that have successfully broken into commercial horticulture have relied on a mix of private entrepreneurship and the ability to organize smallholder producers under some sort of contract farming arrangements. Building on the Project's activities with strengthening farmer organizations (Sub-component A1), the Project will look at promoting the development of linkages between female and male entrepreneurs with trading / exporting capabilities and strong producer organizations who can meet required product standards. The Project will further support the much needed formation of an association of private entrepreneurs in the horticultural sector that will become the natural counterpart to the Government's horticultural promotion bodies. The setting up of such private umbrella organization should also facilitate a better understanding with finance providers (commercial banks and MFIs) and provide a forum for the optimum management of collective infrastructures such as the airport cold store.

23. The Project will finance intensive technical assistance for quality, as well as external certification. In the horticultural marketing study commissioned for the LWH, the quality issue was identified as one of the key priorities for the development of the sub-sector and the realization of the Government's objectives. To complement to the scaled up extension activities proposed in A2, intensive hands-on technical assistance is required. Such assistance should equally cover harvest and post-harvest activities regardless of whether the produce is destined for domestic processing, regional or export markets. Quality for export markets goes hand in hand with obtaining certification to penetrate export consumer markets. The Project will finance the initial cost of auditing and certifying irrigated women and men farmers in LWH for Global GAP and organic certification and support the exploration of other external certification needs (e.g. ISO, Fair-trade, etc.).

24. The Project will facilitate investments that have been identified as critical for post harvest development. The maximization of return to farmers on their horticulture production rests on their ability to limit post harvest losses. This is best achieved by sorting, grading and packing as close as possible to production locations and requires a sensitization of the smallholder on the need for pooling production. The Project will finance key infrastructure investments, including (i) pack houses and cold rooms in LWH areas (i.e. areas with recognized potential for commercial horticulture). The institutional arrangements for ownership and management could be centered on farmer organizations or a combined public-private partnership; (ii) plastic tunnels for greenhouse piloting; (iii) low-cost evaporative field coolers; and (iv) limited number of solar dryers on a pilot basis. Project activities would also provide the technical assistance required to realize the full potential of these investments. On the basis of

these demonstration investments, further beneficiary investment (on demand) can be facilitated by the Project by linking with the rural finance activities of this sub-component (below) and those ongoing in-country (e.g. Second Rural Investment Facility, RIF 2). If potential and gaps exist in domestic small scale processing, the Project would further finance dissemination on processing opportunities and machinery for further private investment. It would further assist female and male entrepreneurs to explore the potential in processing and assist them by linking up with the rural finance leasing activities of the Project (see below).

Rural Finance

25. **Access to finance in Rwanda is low, particularly for rural women and men.** A recent DFID-financed financial access survey shows that Rwanda is characterized by a high level of financial exclusion. Little over 50 percent of Rwandan adults have access to any form of financial services and only 14% of the adult population is banked. These figures are worse for rural women and men, than for urban. The results of the survey have prompted DFID and the Government to propose a financial access trust to better focus and coordinate Government and development partner financial access initiatives. Through a company limited by guarantee (CLG) model, the Access to Finance Rwanda (AFR) initiative will coordinate the long term developments needed for sustainable access to finance for Rwanda's poor, many of whom are rural. Even beyond basic access, in terms of investment finance, a number of further obstacles exist. The most pertinent constraints facing rural entrepreneurs in the financial sector include: An inadequate range of products offered to rural female and male clients; real and perceived high risks in primary agricultural production that spills over to other activities along the chain; and insufficient capacity and linkages by producer organizations with agribusinesses and financial institutions.

26. **The Project will finance investments in improving rural access to financial services (including savings, credit and insurance) on a sustainable basis.** The Project will address the key constraints to rural access to finance through three clusters of activities. Project activities include (i) product development in savings, leasing, value chain financing products (including the exploration of warehouse receipting), and index-based weather insurance; and (ii) capacity building and linkages for rural women and men (financial literacy), their organizations and farmer associations and rural financial service providers such as MFIs; and (iii) promoting sustainable rural financial services through the support of AFR. All capacity building measures will be offered strictly on a demand basis. The demand driven process will be gender sensitive ensuring that the needs of women clients are well articulated, alongside those of men. While costs of public goods and promotional activities will be fully funded under the Project, technical training will be offered on a cost-sharing basis. Commercial banks and MFIs will make higher relative contributions than small rural-based producer groups, and those initiatives geared at financial literacy will be fully funded under the Project.

27. **The Project will develop, with participating financial institutions (PFIs), appropriate pilot agricultural and rural financial products.** These products include savings, leasing, and value chain financing. First, the recent FinScope financial access survey on Rwanda confirmed once again that savers predominantly use savings accounts with banks for unspecified safekeeping of temporary excess liquidity, whereas they have to rely on informal sector for targeted savings (e.g. for school fees) due to a lack of these products with banks or MFIs. At a

time when new procurement methods for fertilizer and business opportunities for producer groups are emerging in Rwanda, the development of targeted savings products is indispensable to facilitate smallholder productivity gains. Most obviously, new savings products can be developed at the level of commercial banks and MFIs that facilitate the purchase of inputs, either as classical targeted savings or by emulating some of the practices of the informal savings and credit associations.

28. Second, in order to achieve the proposed growth in primary agriculture, processing and marketing, significant investments in equipment are needed. Such productive investments require financing over a medium-term period, usually ranging 3-5 years. Financial institutions in Rwanda are reluctant to offer term loans due to: (i) the perceived high risks, perceived and real, and (ii) the lack of term funds. Potential investors often do have difficulties meeting the collateral and high down-payment requirements by banks. Leasing offers some solution to the above, especially because it does not require collateral and typically needs less down-payment. Following the drafting of a new bill on leasing—and substantial capacity building for commercial banks by the IFC since early 2007—equipment leasing has been introduced by banks in urban areas. The Project will build on the IFC leasing initiative, explicitly cooperating with their (urban) leasing program, which they wish to extend to rural areas. With the end of financing for the IFC leasing program by end of FY10, the Project will coordinate early in implementation with the IFC team in order to benefit from their experience in promotional and capacity building activities, including: (i) information seminars for financial institutions on the pros and cons of leasing, its area of application and institutional and operational requirements; (ii) training of senior management on legal/contractual, financial and operational aspects of introducing leasing services; and (iii) training of credit managers and operational staff on all operational aspects of leasing.

29. Third, there is an enormous potential for closer coordination and expansion of value chains, which requires the application of value chain finance modalities in Rwanda. In particular, the Project will develop the use of forward contracts and warehouse receipts as collateral, where warehousing is appropriate to the crop. With the exception of a few export commodities such as tea and coffee, processors and buyers are not familiar with value chain finance, and rural financial institutions are not familiar with complex multi-party arrangements involving many valued chain actors (input providers, producers, transporters, processors, exporters, etc.). The most important activities to be undertaken are: (i) awareness raising and training of actors in the production, processing, marketing and financial sectors on value chain concepts, building on regional and international good practice and solid national experience; (ii) developing on-site linkages to bridge the gaps between farmer organizations, input suppliers, marketing agencies, processors, and financial institutions; (iii) training of actors on their specific functions in value chains; (iv) moderation of the negotiation process on a demand basis; (v) market opportunity studies etc.; and (vi) monitoring and evaluation of the results and processes. A close collaboration with World Food Program (WFP) will be explored and is intended in two areas: (i) the use of value chain approaches for local procurement of food commodities from farmer organizations by WFP under its “Purchase for Progress” program; and (ii) the use of WFP storage infrastructure for potential application of the warehouse receipts concept. The opportunities for a certification of independent warehouse managers will also be explored under this sub-set of activities and will explicitly collaborate with the IFDC’s Warrantage System

program of professional warehouse management and non-tradable receipts of warehouse contents.

30. The Project will support the development of a few pilot index-based weather insurance programs aimed at reducing the associated risk in lending to rural investors. Financial institutions have been reluctant to lend for agricultural production often because of the perceived high risks. The Project will therefore explore existing opportunities and initiatives to reduce the associated risks in lending to rural investors by means of insurance. To this end, two to five index-based weather insurance pilot products will be developed, following the introduction of this approach in Rwanda in early 2009 with MINAGRI's tomato insurance pilot. One of the major constraints for making insurance work for farmers is the lack of reliable and long-term data (minimum of 30 continuous years) on rainfall in Rwanda due to the presence of conflict in Rwanda's recent history. The Kigali airport weather station is the only one in the country which has collected data continuously (and therefore forms the basis for the tomato pilot). The Project will (i) finance a study using satellite images and existing ground data on rainfall to fill the missing ground data gaps, thus permitting insurance companies to calculate their risks and premiums. Other Project activities will include: (ii) the rehabilitation of a number of ground weather stations in LWH Project areas if these do not exist, and the introduction of a new reporting and monitoring system for accurate and up-to-date data capture; (iii) pilot surveys on the demand for insurance among producers and their organizations; (iv) technical surveys to determine appropriate triggers for index-based insurance; and (iv) technical assistance in the packaging and marketing of local insurance companies. Insurance underwriting will be done by national and international insurance companies.

31. The Project will invest in capacity building and linkages for rural women and men, for producer organizations and for rural financial service providers such as MFIs. The depth of knowledge and understanding of financial terms and practices is shallow in rural areas, especially among the poor, which prevents rural actors from understanding and applying new knowledge and taking advantage of economic opportunities. As a consequence, investments in financial literacy are indispensable in moving rural actors to the new practices and innovations needed to realize Rwanda's agricultural growth agenda. Financial literacy activities will focus on the following three target groups: (i) the general public, with a focus on low-income women; the preparation and dissemination of adult education materials for households, businesses and producer organizations on relevant financial terms and practices; (ii) members of financial cooperatives, other cooperatives and informal groups; and technical guides for understanding the practice of credit unions and microfinance; (iii) adolescents and secondary school students. Project activities will also include the training of trainers in MFIs and the cooperative sector, for the dissemination of such materials. The adaptation and downgrading of these guide books for educational purposes in secondary schools will be one by-product. As the AFR is likely to include financial literacy programs, cooperation will be sought with AFR to ensure synergy.

32. The Project will support much-needed upgrade of the financial management and orientation of their producer and marketing cooperatives. Most producer organizations are seriously under-capitalized, and suffer from a lack of capacity and professionalism. Substantial capacity building at primary and secondary cooperative level in this direction will be undertaken, including in the development of new savings and capital formation processes and a review of the internal pricing policies. Furthermore, there is need for stronger organizational capacity for

mobilizing resources from the private sector (as opposed to donor or public sector). Awareness creation, process moderation, exposure to international other local experience and class-room training are the main activities that will be undertaken.

33. **Rural finance MFIs and credit unions also need capacity building to enable them to provide equitable financial services for women and men involved in local value chains.** Gaps that have been identified so far as regards (i) analyzing the risks and potentials in value chain operations, (ii) how to adjust the range of products to the business requirements of farmers, and (iii) how to modify appraisal and post-disbursement monitoring to suit agricultural production. These gaps will be addressed through technical training, on-site technical assistance and guidance and exposures of relevant staff, which will be offered in collaboration with the national MFI umbrella organization AMIR and in close coordination with other development partner initiatives, such as UNCDF and international NGOs.

34. As DFID and Government are finalizing the AFR Program, and given the **common objective of achieving sustainable financial services for the poor for the long term, the Project will financially support the AFR CLG** with funds earmarked for agricultural finance activities. The World Bank and MINAGRI will be represented on the Program Investment Committee (PIC), which will provide strategic oversight to the program.

Sub-Component A4: Institutional strengthening and Capacity Building: MINAGRI and its Agencies

35. **Sub-component A4 is designed to help MINAGRI and its agencies to improve their long term capacity for hillside intensification and sustainable land management.** Activities to be supported by the Project therefore cover both the technical aspects, as well as the engagement of female and male community members, so critical to intensification and to SLM. Activities to be supported under the project include (i) building capacity among MINAGRI staff for gender-sensitive community mobilization, participation, and integrated watershed management approaches (see sub-component B1); (ii) strengthening extension and the technical backstopping capacity of Government staff at all levels, including filling the identified human resource gaps by financing higher technical qualifications of appropriate MINAGRI staff; and (iii) establishing the use of and capacity for a GIS based dynamic information framework (LWH DIF) as a decision support system responsive to climate, climate change and proposed water, land and crop uses under LWH; and (iv) building capacity for phytosanitary implementation.

36. **The Project will invest in capacity building of MINAGRI staff for community mobilization,** including how to (a) formulate and implement communication strategies, comprehensive community consultations and participatory planning processes that promote gender equality; and (b) sensitize and mobilize women and men in project areas to incorporate a participatory and integrated watershed approach into hillside intensification.

37. **The Project will strengthen the extension and technical backstopping capacity of government staff** at all levels. Establishment of a technical advisory group at central, district and sector levels with key focal people will be crucial for facilitating the rapid introduction of intensive and comprehensive land husbandry, water resource management, commercialized horticulture farming and hillside irrigation technologies and practices. Intensive training,

seminars, cross-country study tours and experience-sharing programs will be designed and funded to target the key staff at central and 'zone' level Rwanda Agricultural Board (RAB) staff, district officers, and 'lead' hillside farmers in order to build functional capacity. Gender sensitive technical field guides will be developed in comprehensive land husbandry, irrigation, horticultural management, value adding and marketing, and agroforestry. The Project will help fill the recently identified gaps in technical qualifications at MINAGRI for hillside intensification and sustainable land management, including Bachelors and Masters level qualification in identified 'gap' subject matter areas.

38. The project will support the establishment and operationalization of a reliable, robust and responsive GIS based dynamic information framework (LWH-DIF). The LWH-DIF will provide quantitative and geospatial baselines for land cover, land use, land quality, and hydrology for the project sites. It will link these data layers via a functional distributed hydrology model to predict the impacts of climate, land cover, and land use changes on biodiversity, land, and water. It will further outline the implications of these changes on increased productivity, soil erosion, soil retention rates, water availability and seasonality changes, which in return are used to simulate the sedimentation rates. The project will build up MINAGRI's existing—but very small—GIS unit by financing the equipment and software required for the DIF, which will be of use to a broad range of MINAGRI's programs and activities, as well as to the LWH. The Project will build central and decentralized capacity to develop, calibrate, and use LWH-DIF and to adapt and scale it up to other LWH sites on the national scale. The Project will also explore the participation of female and male Project beneficiaries in the data capture.

39. The Project will support the regulatory environment for the proper handling of produce and strengthen the capacity of MINAGRI and its agencies in sanitary and phytosanitary (SPS) implementation. In order to provide the adequate regulatory environment for private operators in export, the role of the Government's horticultural bodies in SPS has to be clearly defined and its support capacities reinforced. This role would cover plant protection issues, food safety issues, and standards (covering fresh dried and processed products). The WTO-financed (and World Bank-supervised) Rwanda Horticulture Exports Standards Initiative (RHESI) has made substantial progress in these areas, particularly in raising awareness on SPS standards among stakeholders. Given the end of the RHESI extension in December 2009, it would be important for LWH to facilitate the completion of the work initiated by RHESI. To this end, the Project would finance the training of MINAGRI's brand new National Plant Protection Service (NPSS) staff, and support the establishment of a national pest monitoring and surveillance system for prioritized crops and diseases.

Component B

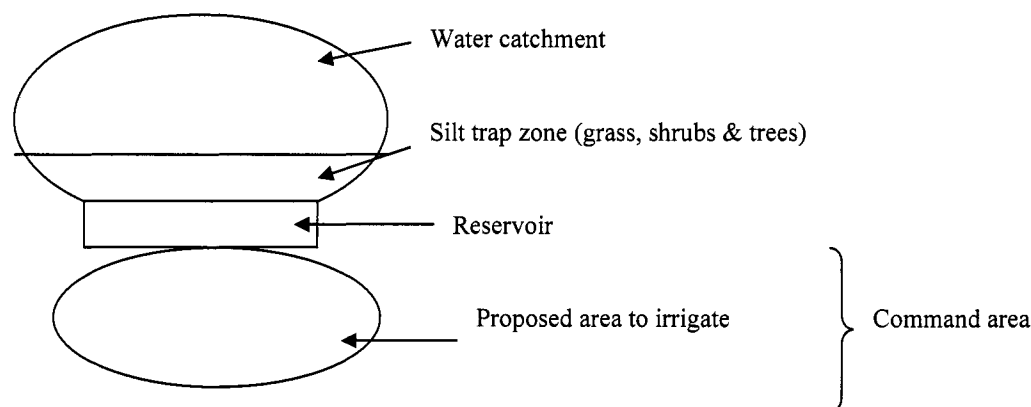
Infrastructure for Hillside Intensification

US\$20.75 million (US\$18.46 million IDA, US\$0.16 million GoR, US\$2.13 million beneficiaries)

40. The objective of this component is to provide the essential 'hardware' for hillside intensification in a participatory fashion, to accompany the capacity development and institutional strengthening activities of Component A. Its three sub-components are organized around the L, the W and the H of LWH: (i) Land husbandry infrastructure supports the

development of participatory and comprehensive land husbandry throughout the sub-watershed to improve productivity for both rain fed and irrigated areas; (ii) Water harvesting infrastructure, including valley dams and reservoirs; and (iii) Hillside irrigation infrastructure, including the development of the conveyance structures for hillside irrigation. With the exception of a few very large sub-watersheds, the average size for potential LWH sites identified in the Government program so far is about 500 ha, although sites can range from 280 ha to 1700 ha depending on the catchment potential. Approximately one fifth of an average site will be irrigated (the irrigated ‘command area’), roughly twice that area is under comprehensive land husbandry development (non-irrigated command area catchment), with the remaining area taken up by the water harvesting infrastructure of dam and reservoir (less than 5% of site surface) and downstream reservoir protection in the water catchment area, including a silt trap zone.

Figure 4 Model Site Schemata for LWH



41. Actual site selection is guided by the common criteria for selection for the entire LWH Program being developed as part of the Common Framework for Engagement (CFE). Preliminary site selection⁴² for the Project used the CFE criteria which include (i) social criteria (responsiveness/interest of beneficiaries; district leadership and ownership; level of social impact, including the number of beneficiaries on the site, the proportion of female-headed households therein, rainfall and livelihood factors such as flood risk and drought prevalence; and the number of displaced households relative to the site size); (ii) economic criteria (site-specific rate of return, year-round access to markets); and (iii) technical and environmental criteria (sufficient water harvesting potential for command size; severity of soil erosion; a moisture regime where water harvesting and irrigation makes a difference, i.e. distribution of rainfall over the year, coincidence of excess rainfall and drought); and an environmental assessment.⁴³

⁴² A pilot application of the CFE common criteria for site selection took place during appraisal. See LWH Aide Memoire for site selection details. Four preliminary sites were identified (Gatsibo 8, Nyanza 23, Karongi 12, and Karongi 13), amounting to 4164 ha for development. The Project can finance a further approximate 450 ha for development using the same selection process to identify future site(s).

⁴³ For the specific application of the CFE common site selection criteria to preliminary Project site selection, see LWH Appraisal Aide Memoire, Annex 8.

42. **In determining the precise package of interventions per site, an options assessment will be conducted.** The options assessment will lay out for project beneficiaries, (i) the exact location of the hillside infrastructure; (ii) the technologies that that can be developed (e.g. extent of land husbandry as compared to the extent of water harvesting and irrigation infrastructure) and used; and (iii) the selection process for agronomically suitable crops that can also be marketed (see A3) on the project site. The objective is to communicate to women and men project beneficiaries as much information as possible to provide meaningful buy in and to maximize their choice and participation in the development of the project on their land. The actual number of direct beneficiaries from this component depends on the final number and size of the sites selected for the operation, as well as the population density in those areas. Beneficiaries include female and male smallholder farmers producing either irrigated or rainfed crops within the project sites.

43. This component will finance civil works, technical assistance, surveys and studies, and goods.

Sub-Component B1: Land husbandry Infrastructure

44. **The Project will develop participatory and comprehensive land husbandry practices in a sub-watershed setting.** Activities to be financed will include soil conservation measures and infrastructure appropriate to differing slope categories (e.g. bunding, green manuring, progressive and radical terracing, etc. See Table 4) and downstream reservoir protection through the development of a silt trap zone for sediment reduction into the reservoir. It is designed to improve hillside agricultural management to protect against erosion and enhance sustained crop productivity and ecosystem conservation. The activities described will equally benefit both female and male-headed farming households in the project-affected area, whether irrigated or rainfed. As above, beneficiaries will participate in the selection of appropriate practices and technologies.

45. **The Project will use participatory land use processes to promote high level stakeholder involvement, and to build awareness and empower the community members to enhance their buy-in for the comprehensive land management work.** Six steps were identified early in Project preparation during a technical mission, which include (a) sub-watershed selection based on pre-defined criteria that include community buy-in and degree of district ownership; (b) formation of a multi-disciplinary planning team, with participation of key stakeholders, such as female and male farmers' representatives, District officers and entrepreneurs, local experts and others; (c) community communication and sensitization on the options assessment (see above), based on developed communication strategy;⁴⁴ (d) detailed socio-economic and technical survey and analysis; and (e) drafting of a plan for site development; and (f) community feedback and plan finalizations.

46. **The Project will invest in infrastructure and hillside technologies based on agro climatic zones, slope categories and on socioeconomic characteristics of the households, in consultation with Project beneficiaries.** Table 4 outlines the proposed technologies by slope

⁴⁴ To this end, under the PPF a dedicated *Strategic Social Assessment for Mobilization, Communication and Gender* has been undertaken.

category. Given the acidity of Rwandan soils, additional activities such as liming may be necessary. In general, it is important to note from Table 4 the varied and comprehensive nature of the land husbandry interventions required.

Table 4 Land Husbandry Measures by Slope Category⁴⁵

	Slope Category	Land-husbandry Measures
1	Nearly level to strongly undulating (slope 0-6 %)	1. Grass strips/trash lines (~1km /ha)
		2. agroforestry interventions
		3. intercropping with plant cover and green manuring
		4. Applying manure/compost at the rate of 10 tons/ha & mulching
2	Gently rolling to strongly rolling (slope 6- 16%)	1. Construction of soil bunds (1km/ha) (level or graded as per agroclimatic zone)
		2. Planting trees/shrubs along the lower side supporting the bunds
		3. intercropping and green manuring
		4. Applying manure /compost at 10 tons/ha and mulching
3	Hilly to steep (slope 16 – 40 %)	1. Constructing Bench (radical) terraces (~1km/ha)
		2. Planting trees/shrubs along the lower side supporting the radical terraces
		3. intercropping and green manuring
		4. liming with agricultural lime at 2.5 tons/ha
		5. Applying manure /compost at 10 tons/ha and mulching
4	Very steep (slope 40 – 60 %)	1. Constructing progressive terraces (~5 km/ha)
		2. Intercropping and green manuring
5	Extremely steep (slope 60 – 120%)	1. Constructing micro-basins with tree planting pits at 1000 /ha
		2. Planting tree seedlings (reforestation) at 1000/ha

47. **The project will invest in infrastructure for downstream reservoir protection.** The aim of downstream reservoir protection is to guarantee the environmentally friendly and long-term use of valley-dam reservoirs. Activities would include survey and design of catchments that contribute water in the form of run-off to the reservoirs, including land area to be inundated; and actions for change of land use (from annual crop production to perennial crop production) among female and male farmers who own the land. These activities including facilitation of any resettlement issues; fencing the reservoirs; planting perennial forage legumes in all immediate upstream sides of the reservoirs; and planting perennial commercial trees in all immediate upstream sides of the forage legume area.

⁴⁵ Slope categories of erosion hazard adapted from Wischmeier & Smith 1978 and Bergsma 1985.

Sub-Component B2: Water Harvesting Infrastructure

48. **The Project will invest in water harvesting infrastructure, including valley dams and reservoirs on the selected sites.** Feasibility and detailed design studies have been conducted. Dams will vary in size, largely remaining under 20 meters in height, and will inundate about 6-8 ha each on average. Water storage allows for irrigated crop production for 100 days on average, permitting a second crop during the dry season. Water harvesting infrastructure will be developed jointly with the irrigation infrastructure (sub-component B3) and after completion of the beneficiary consultation process referred to under that sub-component.

Sub-Component B3 : Irrigation Infrastructure

49. **The Project will develop conveyance structures for hillside irrigation.** This includes primary and secondary water distributions and field level application for basin or furrow irrigation. The component also includes command area development of irrigated hillsides, such as land preparation and land leveling, terracing and bunding. Project activities include (i) confirmation of site selection criteria; (ii) beneficiary consultation and design options selection (see below); (iii) full detailed feasibility and design; (iv) hillside irrigation on all sites developed; and (iv) asset management plans developed for each of the sites developed. For all potential sites, feasibility and detailed design studies have been conducted or are under preparation by Government. Once completed, they will be shared with beneficiaries for approval of the design.

50. **In order to strengthen the sustainability of the investments, the Project will train WUAs in operation and maintenance (O&M) of the lower level of the irrigation schemes.** For the primary and secondary part of the system, the project will consider piloting outsourcing of O&M to private operators through performance based O&M contracts.

51. **The Project will follow a consultative process for hillside irrigation development.** As with other sub-components, activities will include stakeholder consultations with women and men farmers and other stakeholders, ideally after completion of pre-feasibility studies and the preparation of preliminary design options.⁴⁶ The design (including crop selection) options will be developed and presented to female and male beneficiaries, who will choose on the basis of this information. Following the beneficiary selection of the preferred options, a detailed feasibility and design study will be commissioned by the Project (if this is not already available) and appropriate activities from other sub-components will be called into play for the selected crops. Separately, an Environmental Management Plan (EMP) and Resettlement Action Plan (RAP) will be prepared. For each site, an asset management plan will be developed that will outline activities, responsibilities and timeline for operation and maintenance of the infrastructure, including WUAs.

⁴⁶ On some sites, detailed site feasibility studies have already been prepared by Government and these will be used in the consultative process.

Component C

Implementation Through the Ministerial SWAp Structure

US\$ 10.47 million (US\$3.42 million IDA, US\$7.05 million GoR)

52. **The objective of Component C is to ensure that Project activities are effectively managed within the new SWAp structure for Ministerial implementation of programs and projects at MINAGRI.** With the very recent restructuring of MINAGRI—both as part of a Government-wide rationalization and to facilitate the implementation of the agricultural sector’s nascent SWAp—the World Bank is committed to helping MINAGRI effectively manage and implement its programs and projects without the creation of new project implementation units (PIUs). The activities of this Project component are therefore structured around implementation of the Government’s LWH program in line with the SWAp implementation framework proposed by MINAGRI. Project-supported activities include (i) financing, in the immediate term, (and in coordination with MINAGRI, DFID and IFAD) the central and decentralized MINAGRI staff required to implement LWH under the new structure; and (ii) assisting MINAGRI with the implementation of the new SWAp structure, including rigorous M&E and MIS systems and coordination with other essential line ministries (e.g. MINIRENA). See Annex 6 for details on the implementation arrangements under the new SWAp structure at MINAGRI. Component C will fill any human resource gaps in the implementation structure described in Annex 6, in complement to the pre-planned support for the SWAp structure by DFID and IFAD through the PAPSTA project and other capacity support initiatives.

53. This component will finance technical assistance, training workshops and meetings, surveys and studies, and goods (including vehicles).

Annex 5: Project Costs

RWANDA: Land Husbandry, Water Harvesting and Hillside Irrigation Project

Component and/or Activity	(USD million)						
	Local	Foreign	Total	GoR	IDA	USAID	Beneficiaries
A. CAPACITY DEVELOPMENT AND INSTITUTIONAL STRENGTHENING							
1. Support to Farmer Organizations	0.77	0.90	1.67	0.03	1.00	0.81	0.0
2. Support to improve the Extension System	1.44	0.90	2.34	0.00	1.97	0.69	0.0
3. Support to Markets for Marketing and Rural Finance	3.72	4.53	8.25	0.09	8.48	0.00	0.11
4. Support to MINAGRI and its Agencies	0.47	0.11	0.58	0.00	0.67	0.00	0.0
<i>Subtotal</i>	6.40	6.44	12.84	0.12	12.12	1.50	0.11
B. INFRASTRUCTURE FOR HILLSIDE INTENSIFICATION							
1. Land Husbandry Infrastructure	3.51	1.82	5.33	0.07	3.69	0.00	2.13
2. Water Harvesting Infrastructure	2.20	4.89	7.09	0.04	7.22	0.0	0.00
3. Irrigation Infrastructure	1.76	5.69	7.45	0.05	7.55	0.0	0.00
<i>Subtotal</i>	7.47	12.40	19.87	0.16	18.46	0.00	2.13
C. IMPLEMENTATION THROUGH SWAp STRUCTURE							
1. Project Preparation Fund (PPF)	0.39	0.52	0.91	0.00	0.91	0.00	0.00
2. Implementation through the SWAp Structure	1.85	7.15	9.00	7.05	2.51	0.00	0.00
<i>Subtotal</i>	2.24	7.67	9.91	7.05	3.42	0.00	0.00
Total Baseline Cost	16.11	26.51	42.62				
Physical Contingencies	0.09	0.17	0.26				
Price Contingencies	1.83	0.36	2.19				
TOTAL PROJECT COST	18.03	27.04	45.07	7.33	34.00	1.50	2.24

⁴⁷ Cost breakdown by local/foreign split is based on component costs exclusive of contingencies. Cost breakdown by financier is based on component costs inclusive of contingencies.

Annex 6: Implementation Arrangements

RWANDA: Land Husbandry, Water Harvesting and Hillside Irrigation Project

1 In accordance with the Paris declaration on aid effectiveness (2005) and the Accra Agenda for Action (2008), MINAGRI and Development Partners (DPs) signed a Memorandum of Understanding (MoU) establishing a Sector Wide Approach (SWAp) in the agriculture sector in December 2008. The SWAp is centered on the implementation of the Government's comprehensive agricultural strategy known as the SPAT II (the second Strategic Plan for the Transformation of Agriculture). SPAT II, finalized in 2008, is built upon lessons learnt from SPAT I, which was developed in 2004. The SPAT II is fully aligned with recent national plans and strategies, including the EDPRS. SPAT II is considered by MINAGRI and DPs as the framework for engagement on agricultural development in Rwanda. Under SWAp arrangements, stand alone PIUs will be phased out and MINAGRI capacity will be scaled up to support implementation of the Government's different projects and programs.

2 SPAT II is divided into 4 programs which are interlinked and implemented by MINAGRI, its agencies and other institutions involved in rural development, often with the financial support of DPs. The four programs are:

Program 1: *Physical Resources and Food Production* (intensification and development of sustainable production systems);

Program 2: *Producer Organization and Extension* (support to the professionalization of producers.);

Program 3: *Entrepreneurship and Market Linkages* (promotion of commodity chains and the development of agribusiness);

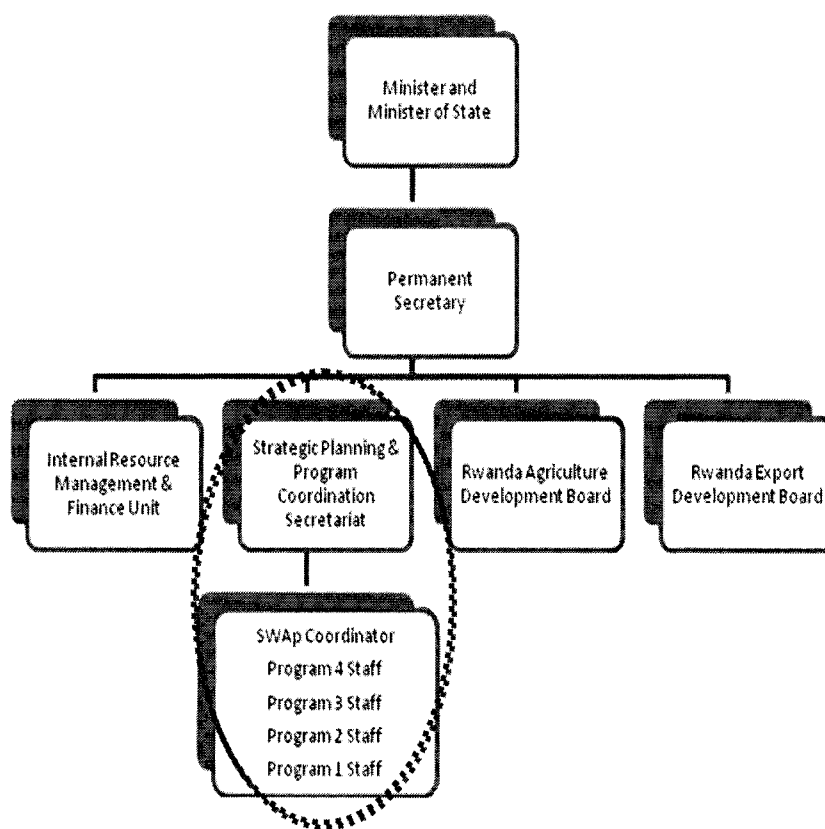
Program 4: *Institutional development* (strengthening public and private sectors and the regulatory framework for agriculture).

3 In order to successfully coordinate and oversee implementation of PSTA II under a SWAp, MINAGRI has accordingly re-organized its structures to streamline working relationships amongst all units, institutions and decentralized entities involved in the implementation of the sector strategic plan. In the new Ministry structure, only two units exist at the Central level: The Internal Resource Management and Finance Unit, and the Strategic Planning and Program Coordination Secretariat (SPPC). MINAGRI has also restructured its agencies, reorganizing the six agencies into two Boards: Rwanda Agricultural Board (RAB) and National Export Development Board (NEB) (see Figure 5). The Boards are, in the long run, intended to be the Ministry's implementing bodies for the sector strategy and policies. To accommodate this role, the new structures (i.e RAB and NEB) will be expanded over the next years to include strong administrative and implementing functions at the decentralized levels through four Provincial 'Zones' (see Figure 7), although this is a long term vision for the Ministry.

4 The SWAp implementation structure is composed of four program implementation units, one for each of the SPAT programs (see circled boxes in Figure 5). Each SPAT program will have a Program Manager (PM), and a team of implementation support staff (see Figure 7). As a result of Project preparation activities, the Project will also have a strong

Environmental Officer at the LWH/Program 1 Implementation Team to provide capacity support and oversight for the new sector-level environmental officers. The Program Manager reports directly to the Permanent Secretary (PS) in MINAGRI. PMs will manage all projects and programs that fall under their respective PSTA Program, while individual projects/programs will be managed by a specifically assigned Project Contract Manager (PCM). PCMs will report to the PMs and have direct access to the Program's FM, Procurement and M&E Specialists (see Figure 6). In addition, the SWAp Facilitator will work closely with the Program Managers, Board CEOs, Development Partners, and support the Permanent Secretary in overseeing effective implementation of the SWAp MoU. It is important to note the special role of Program 4 Implementation Team. Program 4 of the SPAT pertains to Institutional Development and, therefore, contains all the planning, coordination and policy staff of the Ministry.

Figure 5 MINAGRI Organigram and SWAp Implementation Structure



5 The **Government's LWH Program falls under SPAT Program 1**, dealing with physical resources and food production, intensification, and the development of sustainable production systems. The Bank-financed LWH Project is the first slice of the larger Government program and will, therefore, be implemented under Program 1 within the new SWAp implementation structure of Figure 5. The LWH Project will support the piloting of this structure as part of its commitments to the SWAp and to greater aid coordination and Government implementation. In order to pilot and build the capacity of the new SWAp structure, LWH Project will initially be the only activity to be implemented under Program 1, and will follow Bank procurement and financial management procedures, as per ongoing SILs and APLs in the

country. As the unique activity under implementation of Program 1, the LWH Project will not require a dedicated PCM, but fall under the direct responsibility of the Program 1 Manager. By staffing and training Program 1 to implement LWH Project in accordance with the model envisioned by Government for their full SWAp implementation, the Project will contribute to the long term capacity of the Ministry to implement its own programs and activities under greater budget support. Should IDA jointly determine with MINAGRI that the Program 1 implementation structure is sufficiently able to absorb other SPAT Program 1 activities (e.g. Crop Intensification Program) before the end of the Project, then a dedicated LWH PCM would be assigned to LWH and the Program 1 team staffed up accordingly.

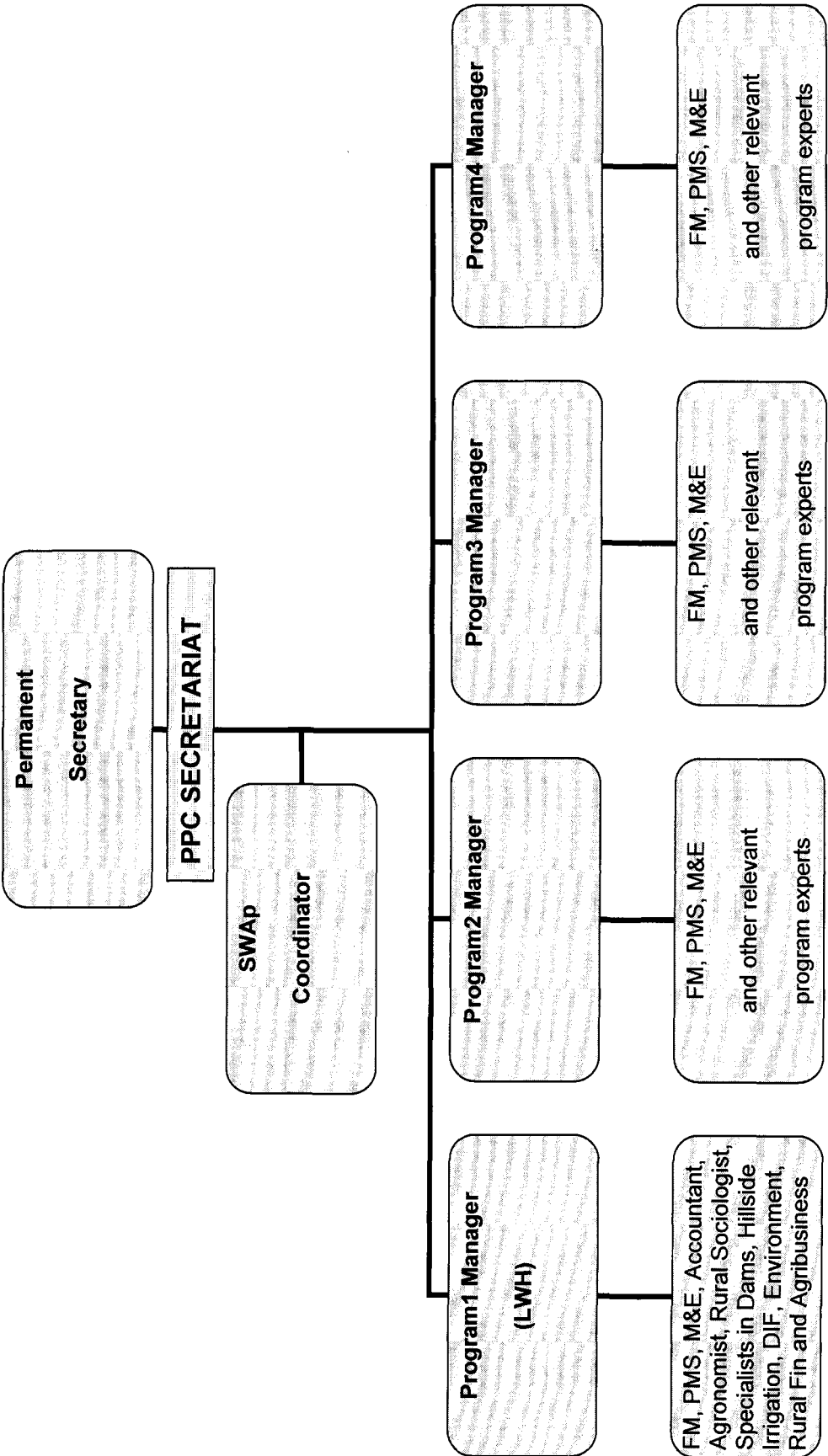
6 SWAp Structure LWH/Program 1 Implementation Team will implement LWH Project with the assistance of competent and technically appropriate implementation staff. The Program 1 implementation team responsible for LWH Project implementation will include a program manager (PM), financial manager (FM), procurement management specialist (PMS), M&E specialist, a technical oversight specialist, hillside irrigation specialist, rural sociologist, a senior agronomist, an agribusiness specialist, an environmental officer, a dynamic information framework (DIF) specialist, and an accountant (Figure 6). Further, a rural finance specialist will be recruited by the Project. Once the SPAT Program 3⁴⁸ Implementation Team is in place, the Project's rural finance specialist will migrate to that team, whilst providing continuing support to the LWH rural finance activities. The PM, FM, PMS, and Technical Oversight Specialist have been hired and the other staff members are under recruitment and will be recruited by Project effectiveness. Furthermore, the Government will develop and adopt a Project Implementation Manual (PIM), agreed with the Bank, setting out implementation, organizational, administrative, monitoring and evaluation, environmental and social monitoring and mitigation, financial management, disbursement, and procurement arrangements for purposes of Project implementation.

7 The Program 1 FM will work on a regular basis with the Ministry's Administration and Finance (DAF) office, submitting quarterly budget plan execution arrangements, as well as quarterly financial management reports (FMRs). The DAF consolidates FM reports for delivery to the PS, MINAGRI and MINECOFIN. The Program 1 Manager will also regularly liaise with the DAF office for administrative issues including office space, staff disciplinary issues, code of conduct, etc.

8 Similarly, the Program 1 PMS is organizationally linked with the Ministerial Procurement Manager in MINAGRI. The PS, MINAGRI, will chair all tender proceedings. The Project PMS, however, will follow normal IDA procedures for procurement in a SIL, and the PS, MINAGRI, will approve and sign contracts as Chief Budget Officer.

⁴⁸ SPAT Program 3 Entrepreneurship and Market Linkages, contains the Government's rural finance program and will be the locus for rural finance activities in MINAGRI and in the SWAp structure under development.

Figure 6 MINGRI SWAp Structure and LWH



9 **Project implementation arrangements take place at three levels: national, district and community level (see Figure 7).** As discussed, the Project's implementation arrangements at the national level have been designed to build upon—and build up—the SWAp structure at MINAGRI. Program 1 Manager, together with his/her team will follow day to day LWH Project implementation. In line with the Government's decentralization agenda, the Project implementation arrangements also envision a division and migration of responsibilities and functions to local governments in the vicinity of LWH sites. This will ensure continuing effective oversight of key technical and administrative functions that are best performed centrally, while enabling local engagement in the districts where the project activities will be carried out. This in turn will facilitate more regular and meaningful engagement with partners and stakeholders and reinforce the ownership at the decentralized levels. The Project will, therefore, actively support the implementation capacity required in LWH-related district offices in order to build the long term capacity for decentralization.

(a) National Level

10 **As the official executing agency for LWH, MINAGRI will have overall responsibility for the implementation of the Project at the national level,** recruiting a Program Manager for Program 1 and the implementation team, as detailed above. The LWH PM will rely heavily on contracts and agreements with implementing bodies, including but not limited to the MINAGRI RAB and NEB boards. MINAGRI boards are expected to have active MoUs with LWH/Program 1 Management for the provision of those services which they are judged best to perform on a national or regional scale. For those services best provided by national or international service providers, these service providers will compete for contracts as per standard procurement procedures.

(b) Provincial and District Level

11 Given the possibility of having MINAGRI boards implement some of the Project activities, such activities will be implemented at the provincial level through the Zonal Agricultural Offices of RAB and NEB where MoUs exist with the boards.

12 More importantly, **at the District level, local government offices will be reinforced by a 'District LWH Implementation Support Team'.** The Project has assessed the District-level capacity weaknesses and will (a) provide for extra LWH implementation support at District level (see below); and (b) include a mandate among LWH District implementation support staff to build capacity among their District Government analogues (e.g. LWH District Procurement Officer to actively engage with District Office Procurement Officer).

13 **The Project has developed with Government a common approach to decentralized implementation comprised of three parts:** (1) a 'core' District LWH Implementation Support Team' funded by the Project, comprised at a minimum of a Financial Management Officer, Procurement Officer, and a Monitoring and Evaluation (M&E) Officer. In addition to these three core people, the following core competencies must be hired: irrigation, agronomy and SLM. Of this core team of competencies, the Project will assign one member to be District LWH Coordinator according to the most appropriate personal profile. A technical capacity assessment at the District Office will determine whether and how the core team should be amplified and/or

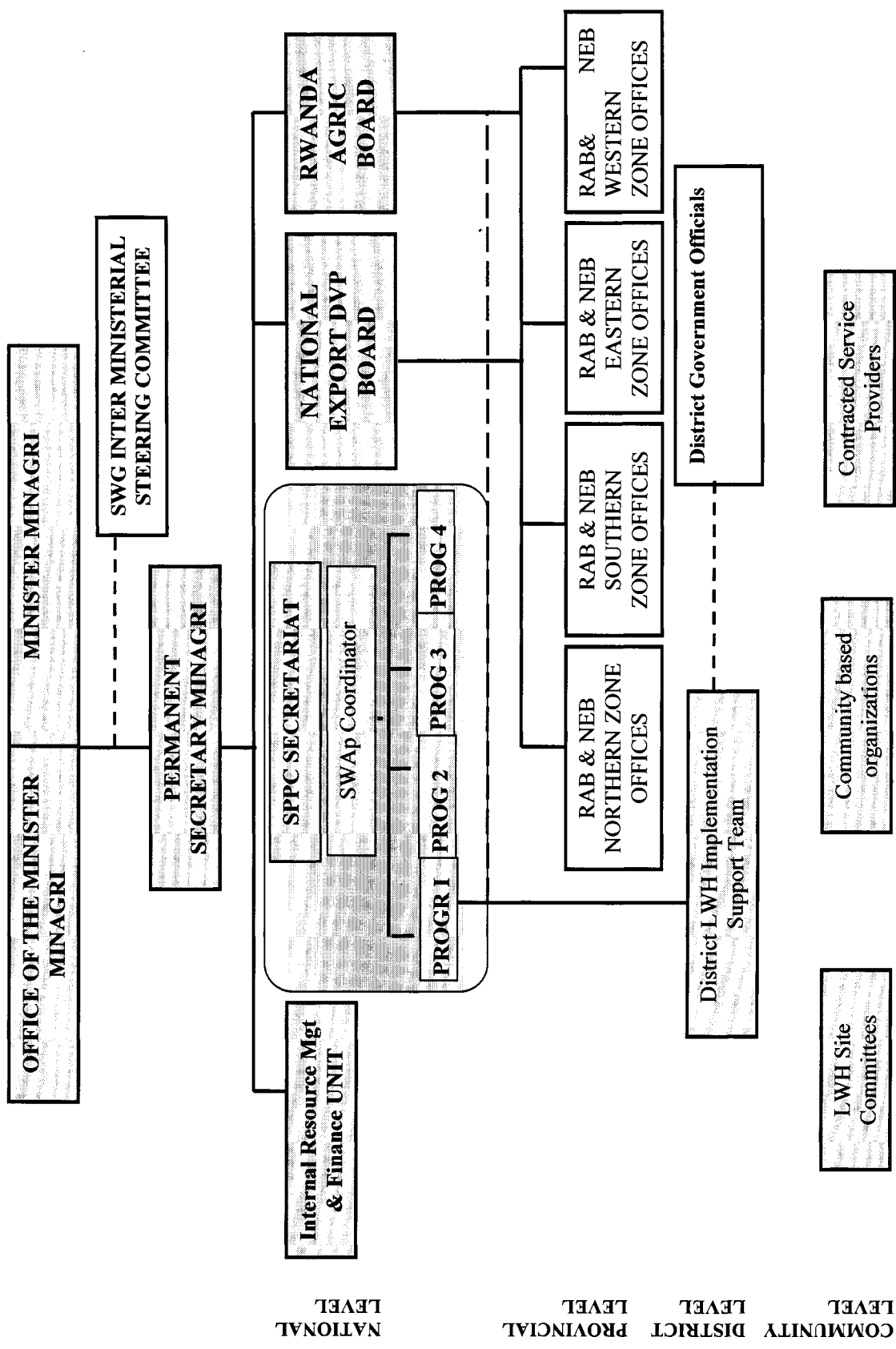
how (2) existing District staff can be strengthened to support implementation. Finally, the approach would determine (3) the roles for which additional contracts will be negotiated with service providers for implementation of Project activities if capacity for such is lacking at the site level (e.g. extension, horticultural technical assistance (TA), etc). In sum, District-level implementation involves: The uniform recruitment of the (1) 'core team' across all districts of the Project; and a diagnostic of the existing District capacities available on a District by District basis. This will inform whether further Project recruitment for the (1) LWH Implementation Support Team is necessary, or whether it is (2) sufficient to build on existing District (civil servant) capacity or (3) what needs should and can be met through contracts with service providers. It also includes the formation of community-based LWH committee.

(c) Community Level

14 Many activities supported by the Project will be demand-driven. That is, Project beneficiaries will be given a choice of activities, topics, trainings and/or service providers to decide upon according to their own self-assessed needs and preferences. Some activities may, therefore, be carried out at the local level by community based organizations. That is, local entities will identify, prepare, and/or supervise activities supported by the Project and compatible with the LWH CFE. While these activities will be procured with the assistance of central or District LWH Implementation Teams, the communities will be heavily involved in the selection and oversight of activity execution. Further, some activities will be carried out at the local level by community based organizations and their members, for which community-based procurement procedures will be used. Community-based organizations will also be involved in monitoring and evaluation of Project activities, in line with the philosophy of the Project to promote participatory M&E and engaging the direct beneficiaries.

15 The Project will support the formation of community-based LWH Site Committees involving sector and community leaders, together with farmers and other community members, for each site. These LWH Site Committees will participate fully in planning and M&E of project activities at site level. However, LWH site committees will not replace full beneficiary consultation and communication on key site issues (e.g. crop selection, extension demand, technology information-sharing, etc.). LWH Site Committees will be an active interface between service providers and LWH teams at district and central level, and they will play a major role in mobilizing beneficiaries and in facilitating communication.

Figure 7 LWH Centralized and Decentralized Implementation



Annex 7: Financial Management and Disbursement Arrangements

RWANDA: Land Husbandry, Water Harvesting and Hillside Irrigation Project

1. This Annex reports on the results of the financial management assessment carried out for the LWH Project to be implemented under Program 1 Implementation Team of MINAGRI's proposed SWAp implementation structure. The objective of the assessment is to determine whether: (a) the LWH/Program 1 Implementation Team of MINAGRI 'SWAp Structure' will have sufficiently qualified financial management staff and adequate financial management arrangements to ensure Project funds will be used for purposes intended in an efficient and economical way; (b) LWH Project's financial reports will be prepared in an accurate, reliable and timely manner; (c) arrangements exist for an independent audit of the sources and uses of Project funds; and (d) its assets will be safeguarded.

2. The financial management (FM) assessment was carried out in accordance with the Financial Management Practices Manual issued by the Financial Management Sector Board in February, 2009.

Country Issues

3. **The Country Financial Accountability Assessment (CFAA) prepared in 2005 documented the evaluation of the Public Financial Management (PFM) environment in Rwanda.** It revealed that despite continuing weaknesses in the PFM system, the Government has made tremendous strides towards improving accountability. The adoption of the Organic Budget Law (OBL), of accompanying financial instructions and the continuing efforts to adapt Government's institutional arrangements indicate the Government's resolve to strengthen PFM in the country. Furthermore, there is evidence of Government action in addressing issues identified in previous reports. The budget preparation process has been strengthened with the introduction of the mid-term expenditure framework (MTEF). The process is much more structured, with increased levels of stakeholder participation, particularly of civil society and development partners. These achievements culminated in the preparation of the first set of consolidated financial statements for the year ended 2006 and subsequently, those of 2007. A comprehensive review by the Office of the Auditor General of the consolidated financial statements for the year ending 2006 revealed however that inadequate support of expenditure remained a significant shortcoming and represented an underlying weakness in PFM.

4. **Despite the recent progress, therefore, continuing weaknesses in the financial accounting and auditing systems pose a major fiduciary risk.** The biggest challenge facing Government is the severe human resource capacity constraint. The ability to attract and retain technically trained and qualified financial management personnel is central to the sustainability of PFM reforms.

5. **The Government has adopted a number of measures to address the shortcomings indicated above.** These mainly center on the creation of suitable capacity to implement the provisions of the new legal and regulatory framework, ensuring the availability of sufficient guidance to PFM personnel, and commencement of the regular preparation of financial statements. The Government has taken measures to enhance the procedures for budget preparation (strengthening the alignment of budgets with strategies) and the control over its

treasury resources. The Government carried out a needs assessment that identified the financial management skills required in government, including accountants and internal auditors. The Government has embarked on a recruitment exercise to fill the vacancies in this area. Workshops have been conducted for the existing personnel and programs for annual refresher courses have been suggested in the PFM reforms. The roles of the audit institutions have been clarified to remove previously existing redundancies. The Government has adopted International Public Sector Accounting Standards for accounting and financial reporting.

Risk Assessment and Mitigation

6. Table A7.1 shows the results of the risk assessment from the Risk Rating Summary. This identifies the key risks that the LWH Project may face in achieving its objectives and provides a basis for determining how they should be addressed.

Table A7.1 Financial Management Risk Rating Summary

Type of Risk	Risk Rating	Brief Explanation	Risk Mitigating Measures Incorporated into Project Design	Residual Risk Rating	Condition of Negotiations, Board or Effectiveness (Y/N/?)
INHERENT RISKS					
Country Level	M	PEFA Assessment completed in 2007 identified certain areas that needed strengthening which included accounting, reporting at the central and decentralized levels, and external audit and oversight.	LWH will be implemented under LWH/Program 1 Implementation Team, in which MINAGRI capacity will be scaled up to support implementation of the Government's different projects and programs. This is further supported by other projects in the Ministry (e.g. PAPSTA).	M	No
Entity Level	S	Monitoring and enforcing arrangements may be hampered by capacity constraints. Performance of core accounting and reporting, particularly at decentralized levels, is considered to be very weak and a key risk area. Other areas considered to be weak include External oversight attributed to capacity constraints.	GOR is focused on the creation of suitable capacity through a well defined PFM strategy and the Rwanda Expertise scheme. This seeks to develop different capacity levels through training of personnel both at the central and decentralized levels, to implement the provisions of the Organic Budget Law (OBL) and the accompanying financial instructions, ensuring the availability of sufficient guidance to PFM personnel, and commencement of the regular preparation of financial statements. The Office of the Auditor General is benefiting from capacity building initiatives through Swedish & Dutch Audit Offices and the PSCBP.	M	No

Type of Risk	Risk Rating	Brief Explanation	Risk Mitigating Measures Incorporated into Project Design	Residual Risk Rating	Condition of Negotiations, Board or Effectiveness (Y/N?)
Project Level	S	MINAGRI's SWAp implementation structure is at its nascent stage and poses challenges for the implementation of LWH. The decentralized nature (for Districts) of the Project would expose the Project to risk over a large number of transactions	LWH program 1 will developed as a SWAp structure development project and have mitigation measures built around it. At decentralized levels, the Project will support the FM function at Districts alongside the <i>District LWH Support Team</i>	M	No
Overall Inherent Risk	S			M	
Control Risk					
Budgeting	L	MINAGRI's current budgeting arrangements under the financial instructions issued alongside the OBL may not be adequate for the LWH/Program 1 requirements and may be limited to the Central level	The budgeting arrangements will be well documented in a financial management manual under preparation. Budget analysis will be conducted to ensure budget variances are addressed on an adequate and timely manner.	L	No
Accounting	S	The FM staff in Program 1/ LWH implementation team consist of a finance manager and envisions the recruitment of an accountant, both of whom may not be familiar with World Bank procedures. Neither a financial management manual nor the chart of accounts has been developed. Accounting and reporting are	A financial management manual (part of the PIM) has been prepared, and agreed with the Bank. It is harmonized with the financial instructions issued under the PFM reforms, and includes a chart of accounts. Program 1 for LWH implementation will recruit an accountant. The District finance team will be strengthened by recruiting accounting officers dedicated to LWH.	M	N) Y (Effectiveness - for recruiting an accountant for central implementation team)

Type of Risk	Risk Rating	Brief Explanation	Risk Mitigating Measures Incorporated into Project Design	Residual Risk Rating	Condition of Negotiations, Board or Effectiveness (Y/N?)
		weak at district levels Lack of accounting software.	MINAGRI will facilitate the acquisition of appropriate/adequate software to be used to maintain Program 1 LWH's books of accounts.		3 months into effectiveness
Internal Controls	S	Quality of work of the Internal audit function may not be robust given the institutional and organizational weaknesses associated with the creation of the office under PFM reforms. Authorization and approval procedures may not be adequate for Program 1 for LWH. The Auditor General's report found no evidence of timely recording and reconciliation within MINAGRI.	MINAGRI's <i>internal auditor</i> seconded from MINECOFIN has strengthened the function as outlined in the PFM strategy. Program 1 for LWH to ensure that its internal audit support is integrated in the Ministry's Internal auditor's plan. Financial Management Manual will document and address the internal control shortcomings noted.	M	No
Funds Flow	M	MINAGRI is currently part of the treasury accounting systems without its proper account which may not provide an adequate audit trail for the LWH disbursements and managing of bank accounts, and may affect the funds flow process.	Separate segregated designated accounts will be opened for LWH (IDA Credit and Trust Fund Grant) in the National Bank of Rwanda and denominated in US dollars. A "project" local currency account will also be opened to receive counterpart funds.	L	Yes (effectiveness)

Type of Risk	Risk Rating	Brief Explanation	Risk Mitigating Measures Incorporated into Project Design	Residual Risk Rating	Condition of Negotiations, Board or Effectiveness (Y/N?)
Financial Reporting	M	MINAGRI provides several reports at different frequencies for special reporting requirements. The format and content of the reports may not be adequate for LWH reporting requirement.	LWH/Program 1 Implementation team has agreed with IDA on the format, content, and frequency of the unaudited Interim Financial reports.	L	N
Auditing	S	Capacity constraints at the Office of the Auditor General lead to Audit non compliance for the LWH audit. A weak audit environment is prevalent in Rwanda as noted in the recently published ROSC A&A. This may affect the quality of audit reports received and hence their acceptability to the Bank.	A World Bank Capacity Assessment highlighting weaknesses and DPs intervention has been concluded in June 2009.	M	N
			Rwandan Government has completed the legal framework and launched the Institute of Certified Accountants of Rwanda with a view to strengthen the Accounting and Auditing infrastructure.		
			Terms of Reference for the audit have been agreed with Program 1 LWH team		
			LWH/Program 1 team will seek to obtain a consent letter of audit from OAG to conduct the audit of the LWH or otherwise outsource the audit to an independent external auditor, as agreed with IDA		Y 1 month into effectiveness
Overall Control Risk	M			L	
Overall Risk	S			M	

H – High S – Substantial M – Moderate L – Low

7. The overall risk rating for the Project is moderate (M). The LWH financial management may be weakened by the following:

- The LWH Implementation team under Program 1 may not have prior experience on daily management of IDA funds.
- The inherent weaknesses in MINAGRI may affect the overall control environment for LWH Program.

Financial Management Action Plan

8. The action plan below indicates the actions to be taken by the LWH Program to strengthen its financial management arrangements and the dates by which they are due for completion. The action plan has been reviewed by IDA.

Table A7.2 Financial Management Action Plan

	Action	Date due by	Responsible
1	Open separate, segregated designated accounts for IDA credit and TF Grant in the National Bank of Rwanda denominated in US dollars, and a “project” account in local currency, respectively	Effectiveness	LWH/ Program 1 Implementat ion Team
2	Facilitate the acquisition of appropriate/adequate software to be used to maintain Program 1 LWH’s books of accounts	3 months after effectiveness	MINAGRI
3	Obtain a consent letter of audit from OAG to conduct the audit of the LWH or otherwise outsource the audit to an independent external auditor as agreed with IDA	One month after effectiveness	LWH/ Program 1 Implementat ion Team
4	Recruit an accountant for LWH/Program 1 Implementation Team and for each LWH District Implementation Support Team	Effectiveness	LWH/ Program 1 Implementat ion Team

Institutional and Implementing Arrangements

9. **LWH’s implementation arrangements (see Annex 6) at the national level have been designed in a way that builds upon—and builds up—the SWAp Structure at MINAGRI.** In order to successfully coordinate and oversee implementation of SPAT II under a SWAp, MINAGRI has accordingly re-organized its structures to streamline working relationships amongst all units, institutions and decentralized entities involved in the implementation of the sector strategic plan. LWH Program falls under SPAT Program 1, implemented by one of four

program implementation groups making up the SWAp implementation structure (see Annex 6). LWH/Program 1 Implementation Team has a Program Manager (PM) reporting directly to MINAGRI's Permanent Secretary, a Financial Manager (FM), Procurement Officer (PO), and will recruit an M&E specialist, and other relevant program experts. Furthermore, the Government has developed a draft and will adopt a Project Implementation Manual (PIM), agreed with the Bank, setting out implementation, organizational, administrative, monitoring and evaluation, environmental and social monitoring and mitigation, financial management, disbursement, and procurement arrangements for purposes of Project implementation. The PIM would include an outline of the arrangements for exemption of import duties and counterpart funding for resettlement expenses and operating costs (see GoR contributions in Annex 5). The PIM will also outline the distinction of in-kind contributions of Project beneficiaries, particularly for Component B.

Budgeting Arrangements

10. **The budgeting arrangements will be well documented in a financial management manual as part of the PIM.** The procedures will describe the roles and responsibilities of the stakeholders involved in the budgeting process, the timing of the preparation of annual budgets, budget revision and approval mechanisms. Budget variance analysis will be conducted to ensure budget variances are adequately addressed by project management in timely manner.

Accounting Arrangements

Books of Accounts

11. **The FM for LWH/Program 1 will maintain adequate books of accounts which shall include ledgers, journals and the various registers.** The accounting system to be described in the LWH Financial Management Manual will be used to track, record, analyze and summarize the project's financial transactions. LWH "Project" accounts will be prepared on a cash basis in accordance with the International Public Sector Accounting Standards (IPSAS), the legal agreement, and the laws and regulations in Rwanda. The accounting system will allow for the proper recording of project's financial transactions, including the allocation of expenditures in accordance with its components, disbursement categories, and sources of funds. Appropriate controls over the preparation and approval of transactions should be put in place to ensure that all transactions are correctly made, recorded, and reported upon. In this regard, the LWH/Program 1 financial management staff will ensure proper books of accounts have been maintained, and a revised and updated chart of accounts has been adopted.

Staffing Arrangements

12. **The overall responsibility over the LWH's financial matters will remain with the Financial Manager (FM) for Program 1.** S/he will report to the Program Manager who will report directly to the Permanent Secretary in MINAGRI.

13. The key staff members identified to support the implementation of the LWH under LWH/Program 1 Implementation Team, that will account for the Credit funds, will include:

- The Permanent Secretary in MINAGRI (maintain an oversight over SWAp implementation under which LWH will be implemented through Program 1);
- **MINAGRI's Internal Auditor;**
- Program Manager (LWH/Program 1);
- LWH Contract Manager (should activities expand beyond LWH, see Annex 6);
- Finance Manager (LWH/Program 1);
- Accountant for program 1 for LWH and District accounting officers dedicated to LWH activities.

Information Systems

14. MINAGRI currently uses SAGE PASTEL software to maintain its books of accounts. The software has been successfully implemented by GOR as a stop gap measure before the implementation of the IFMIS. MINAGRI will facilitate the acquisition of appropriate/adequate software to be used to maintain LWH/Program 1 books of accounts within 3 months after effectiveness.

Financial Monitoring and Reporting

15. **Bi-annual Interim Financial Reports will be prepared under LWH/ Program 1 in a format complying with World Bank guidelines on the preparation of IFRs for borrowers and will be submitted every 45 days from the end of a six month period to the World Bank for review.** They will contain:

- A statement of sources and uses of funds provided by IDA, any other donor and the Government of Rwanda for the period under review and the cumulative period from inception, reconciled with bank, cash and other fund balances;
- A statement of uses of funds (expenditure) by project activity/component comparing actual expenditure against the budget, with explanations for significant variances; and
- The accounting principles adopted and notes to the financial statements will be disclosed in the report.

Audit Arrangements

16. LWH/Program 1 will undertake to have its financial statements audited and to submit audits satisfactory to IDA in compliance with the provisions of the LWH Financing Agreement. The LWH annual financial statements will be audited by the Office of the Auditor General for state finances, or outsourced to an independent external auditor as agreed with IDA. The annual audit report, including a management report, will be submitted to IDA within six months following the end of each financial year. The auditors will provide a single opinion on the LWH's financial statements and statements of expenditure. Terms of Reference will contain the audit scope to ensure the efficient use of funds for intended purposes and state whether the audit has

been conducted in accordance with International Standards in Auditing. The TORs for the audit have been jointly agreed with IDA.

Internal Control and Internal Audit

Internal Controls

17. **LWH /Program 1's internal controls will be documented in its operations manual complemented with a Financial Management Manual.** The accounting systems, policies and procedures employed by the LWH program in accounting for and managing funds will thus be documented in the Operations Manual and FMM.

18. Specific procedures complying with the financial instructions issued under the PFM reforms will be customized and documented for budgeting, accounting systems, internal controls, funds flow, reporting and auditing, depicting document and transaction flows, the appropriate filing of project documents, management approvals and organizational duties and responsibilities. The accounting system will consist of the methods and records established to identify, assemble, analyze, classify, record and report the transactions of a project, and to maintain accountability for the related assets and liabilities. The aspects to be covered in the Financial Management Manual will include: (i) flow of funds; (ii) financial and accounting policies; (iii) accounting system (including centers for maintenance of accounting records, Chart of Accounts, formats of books and records, accounting and financial procedures); (iv) procedures for authorization of transactions, budgeting, and financial forecasting; (v) financial reporting (including formats of reports, linkages with Chart of Accounts and procedures for reviewing financial information); (vi) auditing arrangements; and, (vii) aspects of human resources.

Internal Auditor

19. **A MINECOFIN internal auditor resident in MINAGRI has been recently appointed.** Audits are carried out in accordance with the Internal Audit Charter published in June 2008, which lays down internationally accepted audit standards. Audits are performed on the basis of an agreed six month's action plan. The internal auditor will conduct reviews which will include ex post verification of expenditure eligibility, as well as physical inspection of works and goods acquired during its implementation. The findings and recommendations of the Internal Auditor will be used by LWH/Program 1 to improve its implementation in areas related to financial management and procurement.

Disbursement Arrangements and Methods and Categories

20. **LWH will receive disbursements from IDA on the basis of incurred eligible expenditures (transaction-based disbursements) given** that the inherent weaknesses in the auditing and accounting environment in Rwanda may not be appropriate for a report-based disbursement. Upon Credit effectiveness and establishment of the TF Grant, initial advances ("Advance" method) up to the ceiling of the designated accounts will be disbursed from the proceeds of the IDA credit and the TF Grant and will be deposited into separate Project-operated Designated Accounts (DA) to expedite Project implementation. The Borrower will report on the use of the advance and request a new advance by providing documentation for actual expenditures through submission of Withdrawal Applications (at least monthly) supported by Statements of

Expenditures (SOE). The reimbursement method will be available should the Borrower pre-finance eligible project expenditures. The Borrower may also use the direct payment method, whereby IDA makes payments directly to a third party (e.g. a supplier, contractor, and consultant) at the Borrower's request. IDA may also pay a third party for eligible expenditures under special commitments entered into, in writing, at the Borrower's request and on terms and conditions agreed between IDA and the Borrower. LWH will maintain a segregated designated account held in BNR and denominated in US dollars. The Designated Account ceiling is set at US\$ 1.5 million, calculated to represent approximately four months of eligible project expenditures. This ceiling will be maintained for the first year and thereafter, the ceiling will be determined based on cash forecasts submitted by the Project Team as part of its project monitoring reports (budgets and/or Annual Work Plans). A project account denominated in local currency will also be opened to receive counterpart funds. Monthly bank reconciliations will be prepared by the LWH accountant, reviewed by Finance Manager, and approved by Program 1 Manager

21. If ineligible expenditures are found to have been made from the designated and/or operating bank accounts, the LWH/Program 1 will be obliged to refund the same. If the designated account remains inactive for more than three months, the LWH program may be requested to refund to IDA amounts advanced to the designated account.

22. For this Project, "taxes" includes imposts, levies, fees, and duties of any nature, other than those payable at the port of entry upon importation, whether in effect at the date of the Financing Agreement or imposed after that date. Goods and equipment will be exempt from import duty (estimated at US\$2.0 million). As agreed with GoR, this exemption will include vehicles, construction equipment and materials and any other goods and services subject to import duty, but vital to the execution of Project activities and achievement of Project objectives.

23. LWH's accounts signatories will be updated as necessary in the accounting and financial management manual. Authorized signatories will be designated in accordance with their positions. The signatories will include:

- The Permanent Secretary in MINAGRI,
- Program manager (LWH/Program 1)
- The LWH Contract Manager; (if applicable, see above)
- Financial Manager (LWH/Program 1)

24. IDA will reserve the right to suspend disbursement of the funds if reporting requirements are not complied with.

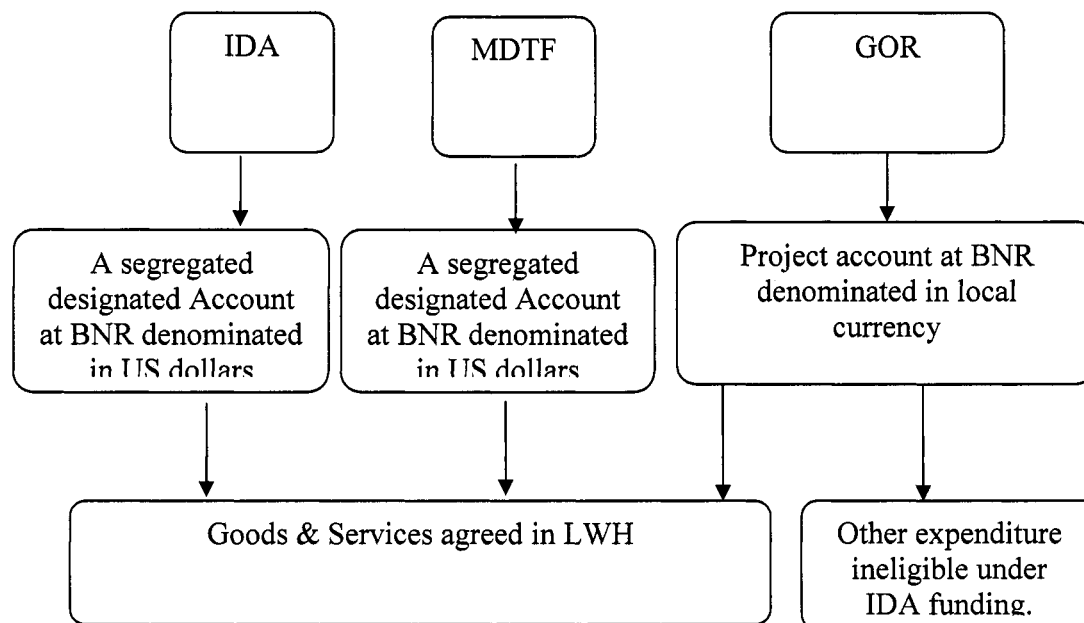
Retroactive Financing:

25. The Borrower is seeking approval for proceeds of the credit to be disbursed using the retroactive financing mechanism for an amount not to exceed US\$1,000,000 of the credit for eligible expenditures paid on or after November 1, 2009 and before the Financing Agreement date.

Counterpart Funding

26. The Recipient will contribute the required resources for the implementation support in kind and in cash, including 100% of operating costs remaining after the portion financed by PPF. The Recipient shall deposit into an account in Rwandan Francs, in a commercial bank acceptable to the Association, on a quarterly basis throughout Project implementation, an amount equivalent to \$62,500, or such other amount as agreed with the Association, required to finance the Recipient's contribution for expenditures under the Project other than those financed from the proceeds of the Credit. The Government will also provide an exemption to the Project for import duty. This is estimated to be US\$2.0 million, but no deposit of funds will be required as Parliamentary approval of the Project's Financing Agreement will provide the Project with exemption from import duty.

FUNDS FLOW CHART3



Conclusion of the Assessment

27. **The Financial Management arrangement above indicates that they satisfy the Bank's minimum requirements under OP/BP 10.02.** The LWH Project Team will open segregated designated accounts (US dollar accounts) for the IDA Credit and Trust Fund Grant and project account (local currency account) by effectiveness as part of strengthening its financial arrangements to provide with reasonable assurance that the funds will be used for the intended purposes.

Supervision Plan

28. Given the residual Moderate risk rating associated with existing FM arrangements, at least one on-site supervision visit will be conducted each year, commensurate with the risk levels. This will be agreed with LWH/Program 1 Team for monitoring the financial management performance of the Project during implementation. The objective of the supervision missions will be to ensure that strong financial management systems are maintained for the Project. Reviews will be carried out regularly to ensure that expenditures incurred by LWH/Program 1 remain eligible. The Implementation Status and Results Report (ISR) for LWH will include a Financial Management rating for the FM component and will be arrived at by the Financial Management Specialist after an appropriate review.

Annex 8: Procurement Arrangements

RWANDA: Land Husbandry, Water Harvesting and Hillside Irrigation Project

A. General

Procurement Environnement

1. **A Country Procurement Issues Paper (CPIP) was prepared for Rwanda in June 2004.** The main recommendations made in the CPIP were incorporated into an action plan for procurement reform, which was discussed with, and adopted by, the Government. Although Rwanda has followed pragmatic procurement practices under the National Tender Board (NTB), the legal, regulatory, and institutional frameworks still needed to be modernized to bring the national procurement system up to international standards as developed by OECD-DAC. Some actions were, therefore, undertaken to this end. For example, a new procurement code was adopted in April 2007. The legal text establishing the Rwanda Public Procurement Authority (RPPA) has been adopted and was published in March 2008. Templates for standard bidding documents were adopted and published on the NTB website. Implementation of the procurement code, however, is not yet complete. Some institutions created by the procurement code have not yet been established, and some audit mechanisms still need to be implemented to ensure better control of the procurement system. A sustainable capacity building action plan is being developed; and procurement guides and manuals still have to be developed and disseminated. However, since these reforms are still at an early stage, public procurement by implementing agencies is still subject to high risk.

Procurement Guidelines

2. **Procurement for the Project will be carried out in accordance with the World Bank's "Guidelines: Procurement under IBRD Loans and IDA Credits" dated May 2004 (revised October 2006); and "Guidelines: Selection and Employment of Consultants by World Bank Borrowers" dated May 2004, revised October 2006, and the provisions stipulated in the Legal Agreement.** The various items under different expenditure categories are described in general below. For each contract to be financed by the IDA credit, the Borrower and the World Bank will agree upon and record in the Procurement Plan the different procurement methods or consultant selection methods, the need for pre-qualification, estimated costs, prior review requirements, and time frame. The Procurement Plan will be updated at least annually, or as required, to reflect the actual project implementation needs and improvements in institutional capacity.

Advertising

3. A General Procurement Notice (GPN) will be published in the UN Development Business (UNDB), Development Gateway's DGMarket, and in national newspaper(s) of wide circulation upon Board approval. The GPN will list the Goods, Works and Consulting Services for which Specific Contracts are expected to be advertised. The Borrower will keep a roster of the responses received from the potential bidders interested in the contracts. The GPN shall be updated annually for outstanding ICB and large consultancy services. Specific Procurement Notices (SPNs) for Goods and Works to be procured under ICB and works to be procured under ICB and NCB for consultant services will be published in a national newspaper of wide circulation, and may also be

advertised in the UNDB and Development Gateway's DGMarket in order to get the broadest interest possible from eligible bidders. For efficiency, such contracts may be advertised in the on-line version of UNDB. The date of the SPN should coincide with the date that bidding documents are available for purchase by interested bidders. Large consulting services will be advertised in the on line version of the UNDB, Development Gateway's, DGMarket, and in an international or technical newspaper, in order to seek expressions of interest (EOI) prior to the preparation of the shortlist. Copy of this advertisement will be sent to those firms which responded to the expression of interest for consulting contracts listed in the GPN. It is also encouraged to contact Embassies and professional organizations; requests for expression of interest for other consulting services will be advertised in a national newspaper of wide circulation. At least two weeks will be allowed for submission of expression of interest.

Procurement of Works

4. Works procured under the Project will include mainly works related to hillside land husbandry (e.g. soil erosion structures, radical terraces, etc) and the construction of hillside irrigation infrastructure (e.g. reservoir, dam, irrigation canals, etc.). Procurement will be done using the World Bank Standard Bidding Documents (SBD) and Standard Bid Evaluation Forms for all International Competitive Bidding (ICB). The procedures to be used for NCB and Shopping will be described in detail in the Program/Project Implementation Manual (PIM). The PIM will be approved by the World Bank. Civil works estimated to cost US\$3,000,000 equivalent per contract or more will be procured through ICB procedures. Civil works estimated to cost less than US\$3,000,000 equivalent per contract will be procured through NCB procedures. Direct contracting may be used when it can be justified that a competitive method is not advantageous and meets the requirements under Paragraph 3.6 of the Procurement Guidelines and after consultation with the World Bank. The prior review threshold for works contracts will be US\$3,000,000 equivalent per contract. In addition, the first two (2) contracts for works estimated to cost less than US\$3,000,000 equivalent, as well as the first two (2) contracts for works estimated to cost less than US\$50,000 for minor works, will be subject to prior review. Pre-qualification of contractors will be used only for large contracts of more than US\$10 million equivalent or in cases where special expertise is required due to the complexity of the packages.

Procurement of Goods

5. **Goods procured under this** project will include furniture, goods, computers and equipment to be used by the LWH Program 1 Implementation Team and, where appropriate, support staff of Program 1. Procurement will be done using the World Bank SBDs and Standard Bid Evaluation Forms for all ICB. The procedures to be used for NCB and Shopping will be described in detail in the Program/Project Implementation Manual (PIM). Goods estimated to cost more than US\$300,000 equivalent per contract will be procured through ICB procedures. Goods estimated to cost less than US\$300,000 equivalent per contract will be procured through NCB procedures. Direct contracting may be used when it can be justified that a competitive method is not advantageous and meets the requirements under Paragraph 3.6 of the Procurement Guidelines and after consultation with the World Bank. The prior review threshold for goods contracts will be US\$300,000 equivalent, per contract. In addition, the first two (2) contracts for goods estimated to cost less than US\$300,000 equivalent, as well as the first two (2) contracts for goods estimated to

cost less than US\$50,000 for minor goods and procured using the Shopping method, will be subject to prior review.

Procurement of Non-consulting Services

6. Non-consulting services to be procured under the Project will include: venues for workshops and training; services related to office equipment, materials for workshops, services required for training events and project information activities. These services, which are likely not to exceed the equivalent of US\$50,000 per contract, will be procured on the basis of at least three quotations.

Selection of Consultants

7. The main consultancy services to be financed by the Project include: (i) supervision of civil works; (ii) technical studies for hillside irrigation and land husbandry; (iii) identification, preparation, and implementation of activities including both those for land husbandry (production) and post-harvest activities; (iv) training and capacity building for all subject matters and levels targeted by the Project; (v) development and implementation of rural finance products; (vi) support of project implementation; (vii) financial management, procurement and M&E support; and (viii) required background, baseline or contextual studies for Project activities. Universities, Government Research Institutions, Training Institutions, NGOs and national and international technical assistance organizations are likely to be contracted to provide technical assistance and carry out studies, such as impact and result evaluation, physical performance studies and other research in their areas of specialization.

8. Consultancies estimated to cost US\$200,000 equivalent or more will be advertised in the DGMarket and in at least one national newspaper having wide distribution.

9. The appropriate methods for consultant selection will be determined for each assignment or package of assignments in the course of preparing the procurement plan on the basis of the nature of the assignment and the provisions of the Consultant Guidelines:

10. Consultant services estimated to cost US\$200,000 or more will be procured through the Quality- and Cost-Based Selection (QCBS) method.

11. Consultant services estimated to cost less than US\$200,000 will be procured through one of several methods, depending on the nature of the assignment:

- (i) Consulting firms or training institutions engaged to organize workshops and other activities geared towards institutional and capacity building will be selected using Consultants' Qualifications (CQS) procedures.
- (ii) Consulting firms for carrying out standard or routine nature assignments such as audits will be selected through Least Cost (LCS) procedures.
- (iii) Consulting firms for services including selection of institutions of higher learning will be done on the basis of quality; therefore, the Quality Based Selection (QBS) method will be used.

- (iv) The single source procurement method may be used where it can be justified and after consultation with the World Bank.
12. Short lists of consultants for services estimated to cost less than US\$100,000 equivalent per contract may be composed entirely of national consultants.
13. Individual consultants would be selected on the basis of their qualifications, in accordance with Section V of the Consultant Guidelines.
14. Consultancy services estimated to cost above US\$200,000 equivalent per contract for firms and above US\$100,000 equivalents per contract for individual consultants will be subject to prior review by the World Bank. The first two contracts for consultancy services (firms) estimated to cost less than the equivalent of US\$200,000 will be subject to prior review. Single source selection of consultants will be subject to prior review by the World Bank.
15. **Operating costs** for the Project will consist of incremental expenditures for any vehicle maintenance, fuel, equipment, office supplies, utility charges, consumables, communication charges, *per diem* and travel costs for staff when traveling on duty or while carrying out activities related to the Project. These costs will be financed by the project and procured in accordance with the PIM.
16. **Other:** The Project will also finance the cost of workshops, study tours, and various consultations with stakeholders regarding the Project. The training, workshops, conference attendance and study tours will be carried out on the basis of approved annual programs that will identify the general framework of training and similar activities for the year, including the nature of training/study tours/workshops, the number of participants, and the estimated cost.

B. Assessment of the Agency's Capacity to Implement Procurement

17. Procurement activities will be carried out by the LWH/Program 1 Implementation Team at MINAGRI, under the direct oversight of the Program 1 Manager. They will be assisted by a team of implementation support staff, including a Procurement Management Specialist, a Financial Management Specialist, a Monitoring and Evaluation Specialist, and other core staff (see Annex 6 for greater detail). The LWH/Program 1 Implementation Team, will initially be uniquely responsible for LWH project coordination, unless capacity is deemed jointly by MINAGRI and World Bank to be sufficient to enlarge Program 1 implementation to other MINAGRI activities. As such, the Program 1 team will be dedicated to oversee the LWH Project implementation at the national level and will also carry out procurement activities through the District Offices, staffed with an LWH District Support Team to build sustainable capacity at the decentralized level. The LWH/Program 1 Implementation Team has been put in place, and is already staffed with the Program Manager, Procurement Management Specialist, and Financial Management Specialist. They are further supported in the short term by a World Bank procurement-trained LWH Contract Manager for the short term.
18. A preliminary procurement capacity assessment, confirmed at appraisal, of the LWH Program 1 Implementation Team at MINAGRI was conducted during identification by the Procurement Specialist assigned to the project. The capacity assessment was based on the fact that (a) implementation support capacity of MINAGRI has already undergone an extensive diagnostic

assessment under the PAPSTA project, tasked with supporting the Ministry in the implementation of the SPAT, and (b) implementation arrangements for LWH will build on the capacity of the SWAp's Program 1 Implementation Team.

19. The assessment reviewed the organizational structure for implementing the project and the interaction between the project's staff responsible for procurement and the MINAGRI's central unit for administration and finance. The assessment revealed that while there is considerable procurement capacity in MINAGRI, the same capacity is not present at district and local levels. Procurement capacity, therefore needs, to be strengthened at these levels. For this reason, since Project identification, the implementation arrangements have been strengthened, particularly at District Level, by staffing the Districts in which the Project is active with District LWH Support Teams, including a Procurement Assistant in each district.

20. District level procurement capacity in Districts with LWH Project activities will be significantly strengthened with the presence of a dedicated Procurement Assistant. As part of its decentralization strategy, Government has signaled its intention to recruit procurement staff for each procuring entity. Most provinces/districts do not yet have experienced procurement staff. Under recent territorial reforms, some Districts have brought in university graduates, but most are still unfamiliar with national and World Bank procurement procedures. To mitigate this situation, Government will ensure that the Districts identified for LWH activities will staff a Procurement Assistant in the District Office as part of LWH Project Implementation and the World Bank will assist in any necessary training or capacity building for national and World Bank procurement procedures. In effecting this coordination, the Project will simultaneously mitigate procurement risk at decentralized levels, whilst contributing sustainably to the Government's long term vision for decentralization.

21. Procurement capacity is variable within the public agencies that will play some role in project implementation (e.g. RAB or NEB). Procurement staff in the agencies that have been merged to form the new RAB and NEB boards under the MINAGRI restructuring are generally knowledgeable when it comes to national procurement processes, but they often are not familiar with international procurement processes. As part of the Ministerial restructuring, the Government is committed to expanding this capacity as the Boards are envisioned to be key implementation agencies. The LWH Project will further sponsor initial orientation sessions as well as periodic procurement workshops to provide procurement staff of these agencies with the training and tools needed to conduct transparent procurement processes.

22. At the local level, procurement capacity is generally very weak. Few of the community based organizations (CBOs) that will play a role in project implementation are familiar with national or international procurement processes and procedures. It is for this reason that, built into the Project design, the LWH will coordinate the installation of District level procurement assistance for CBOs (see above). The Project will further sponsor initial orientation sessions as well as periodic procurement workshops to provide these organizations with the training and tools needed to conduct transparent procurement processes.

23. The overall project risk for procurement is HIGH. After considering mitigating measures, the residual risk is considered as MODERATE. In order to strengthen procurement performance and

to ensure the integrity of the procurement process under LWH Project, the following measures will be undertaken (see table A8.1 below).

Table A8. 1 Schedule of Actions to be Carried Out

Action to be Undertaken	Responsible Body	Time-Frame
Selection of a Program Manager at the national level	LWH/Program Implementation Team	1 Complete
Preparing and submitting to IDA a procurement plan for the first 18 months of the Project	LWH/Program Implementation Team	1 Complete
Preparing and submitting to IDA the draft Project Implementation Manual with a section on procurement	LWH/Program Implementation Team	1 Complete
Procurement training session program focused on procurement planning and contract management issues	LWH/Program Implementation Team	1 Program launching workshop
Recruitment of procurement specialists to work at the district level and provide support to the Project district offices	LWH/Program Implementation Team	1 Prior to effectiveness and as need arises
Setting up a procurement record-keeping and filing system	LWH/Program Implementation Team	1 During the first six months of project effectiveness
Participation of LWH Project staff in World Bank workshops on procurement and training events	LWH/Program Implementation Team	1 Prior to effectiveness and as needed during project implementation

24. The Government has recently taken actions to improve national procurement policies and procedures. The new procurement code adopted in April 2007 includes measures designed to improve the legal and institutional framework governing procurement activities. As a result of the Government's commitment to reform, which among other things has resulted in more consistent application of World Bank procurement guidelines in World Bank-financed operations, many Government agencies are becoming increasingly familiar with the basic principles of open and fair procurement like the submission of a draft procurement plan and enforcing the publication of procurement plans and contract awards. This familiarity, combined with expected broad dissemination of information on new procurement procedures such as standard bidding documents and other procurement-related documents from the early stage of the project to all purchasing agencies, is expected to mitigate some of the remaining risks.

Procurement Implementation Arrangements

25. The LWH/Program 1 Implementation Team, supported by a team of implementation support staff at the four Districts in which the LWH will be operating, will be responsible for all

procurement activities, With regard to procurement, the main task of the LWH/Program 1 Implementation Team will be the implementation of the land husbandry and irrigation activities for the Project's targeted watershed sites, as well as the accompanying rural finance and marketing activities (see Annex 4). The LWH/Program 1 Implementation Team will prepare, consolidate, and update the procurement plan, prepare bidding documents, participate in the bid evaluations, and monitor and manage the execution of contracts. The LWH/Program 1 Implementation Team will work closely with the various departments of MINAGRI and its associated institutions, as well as other representatives of the Ministries involved in the implementation of the Project.

26. The RPPA will be responsible for reviewing bidding documents, bid opening, evaluation, recommendation, and awarding of contracts above the thresholds required by the national procurement regulations. As the action plan launched following the implementation of the new 2007 procurement code takes effect, the regulatory role of RPPA can be expected to strengthen further.

C. Procurement Plan

27. The LWH/Program 1 Implementation Team has developed an initial procurement plan for the first 18 months of the project based on the Project preparation and appraisal outputs. This plan will be updated, finalized, and submitted to the World Bank for approval before IDA credit effectiveness. The agreed plan will be available at the LWH/Program 1 Implementation Team Office within MINAGRI and through the World Bank external website. The procurement plan will be updated in agreement with the Project team annually, or as required, to reflect the actual Project implementation needs and improvements in institutional capacity.

D. Publication of Results and Debriefing.

28. On-line publication of contract awards (for example, through DGMarket, UN Development Business, and/or Client Connection) will be required for all ICB, NCB, Direct Contracting, and Selection of Consultants for contracts exceeding US\$200,000 or equivalent. With regard to ICB, and high-value consulting contracts, the Borrower will be required to assure publication of contract awards as soon as the World Bank has issued its "no objection" notice to the recommended award. With regard to Direct Contracting and NCB, publication of contract awards may be done in aggregate form on a quarterly basis. All consultants competing for the assignment involving the submission of separate technical and financial proposals, irrespective of the estimated contract value, should be informed of the result of the technical evaluation (number of points that each firm received) before the opening of the financial proposals. The LWH/Program 1 Implementation Team will be required to offer debriefings to unsuccessful bidders and consultants, should such a debriefing be requested.

E. Fraud and Corruption

29. The procuring entity, as well as bidders, suppliers, and contractors will observe the highest standard of ethics during the procurement and execution of contracts financed under the program, in accordance with paragraphs 1.14 and 1.15 of "Guidelines: Procurement under IBRD Loans and IDA Credits, May 2004, revised 1 October 2006" and 1.22 and 1.23 of "Guidelines: Selection and Employment of Consultants by World Bank Borrowers, May 2004, revised 1 October 2006"; and

Article 15 of the Procurement Law. The Project will carry out implementation in accordance with the “Guidelines on Preventing and Combating Fraud and Corruption in Projects Financed by IBRD Loans and IDA Credits and Grants”, dated October 15, 2006 (the Anti-Corruption Guidelines).

F. Frequency of Procurement Supervision

30. In addition to the prior review supervision to be carried out from World Bank offices, the capacity assessment of the proposed implementation structure for LWH Project has recommended that supervision missions visit the field once every six months to carry post-review of procurement actions.

G. Details of the Procurement Arrangements Involving International Competition:

LWH Procurement Plan

I. General

1. Project Information

Country: Rwanda

Project Name: Land Husbandry, Water Harvesting and Hillside Irrigation

Project Implementing Agencies: MINAGRI-LWH/Program 1 Implementation Team

World Bank's Approval Date for the Procurement Plan: Negotiations Date

Date of General Procurement Notice: (after Board approval)

Period Covered by this Procurement Plan: December 2009 to June 2011

II. Goods and Works and Non-consulting Services

1. Prior Review Threshold: Procurement decisions subject to Prior Review

	Procurement Method (category)	Contract Amount (US\$ equivalent)	Subject to Prior Review
1.	ICB (Works)	$\geq 3,000,000$	All
2.	NCB (Works)	$< 3,000,000$	First two contracts
3.	ICB (Goods)	$\geq 300,000$	All
4.	NCB (Goods)	$< 300,000$	First two contracts
5.	Shopping (Goods and Works)	$< 50,000$	First two contracts
6.	Direct Contracting (Goods and Works)	Regardless of value	All

2. Prequalification: Bidders for civil works shall be prequalified in accordance with the provisions of paragraphs 2.9 and 2.10 of the Procurement Guidelines.

3. Other Special Procurement Arrangements: N/A

Procurement Packages with Methods and Time Schedule

Ref No.	Contract description	Estimated Cost (US\$)	Procurement Method	P-Q	Domestic Preference	Review by World Bank	Expected Bid Opening
1. Works – Construction of Water Harvesting Infrastructure (damsand reservoir)							
1.	Site: Karongi 13	1,444,600	ICB	NO	YES	Post	April 2010
2.	Site: Nyanza 23	1,230,700	ICB	NO	YES	Post	May 2010
3.	Site: Karongi 12	1,055,500	ICB	NO	YES	Post	April 2010
4.	Site: Gatsibo 8	1,244,000	ICB	NO	YES	Post	May 2010
Construction of land husbandry infrastructures and reservoir protection measures							
1.	Site: Karongi 13	1,295,100	NCB	NO	NO	Post	July 2010
2.	Site: Nyanza 23	823,700	NCB	NO	NO	Post	July 2010
3.	Site: Karongi 12	1,924,500	NCB	NO	NO	Post	July 2010
4.	Site: Gatsibo 8	1,601,500	NCB	NO	NO	Post	July 2010
Construction of irrigation infrastructure							
1	Site: Karongi 13	1,645,500.	NCB	NO	NO	Post	August 2010
2	Site: Nyanza 23	1,545,500	NCB	NO	NO	Post	Sept 2010
3	Site: Karongi 12	1,358,000	NCB	NO	NO	Post	August 2010
4	Site: Gatsibo 8	450,000	NCB	NO	NO	Post	Sept 2010
Construction of post harvesting infrastructures							

Ref No.	Contract description	Estimated Cost (US\$)	Procurement Method	P-Q	Domestic Preference	Review by World Bank	Expected Bid Opening
1	Gatsibo Packhouse and Cold Room	1,000,000	NCB	NO	NO	Post	Nov 2011
2	Nyanza Packhouse and Cold Room	1,000,000	NCB	NO	NO	Post	Nov 2011
3	Karongi Packhouse and Cold Room	1,000,000	NCB	NO	NO	Post	Nov 2011
2. Goods							
1	Vehicles 4WD (3)	140,000	NCB	NO	NO		April 2010
2.	Acquisition of horticultural planting material	3,400,000	NCB	NO	NO	Prior	Feb 2011
3.	Evaporative coolers	4,800	Shopping	NO	NO	Post	Jan 2011
4.	Solar dryers	300,000	ICB	NO	YES	Prior	
5.	Plastic tunnels	600,000	ICB	NO	YES	Prior	Jan 2011
6	Support to District equipment	25,000	NCB	NO	NO	Post	May 2010
7	LWH office furniture & equipment	35,000	NCB	NO	NO	Post	April 2010
8	LWH office supplies and stationeries	20,000	NCB	NO	NO	Post	Jan 10-June 2011
9	Hiring of vehicles	38,000	NCB	NO	YES	Post	Jan 10-June 2011

Ref No.	Contract description	Estimated Cost (US\$)	Procurement Method	P-Q	Domestic Preference	Review by World Bank	Expected Bid Opening
10	Adverts and mailing	32,000	NCB	NO	NO	Post	Jan 10-June 2011
11	Communications	38,000	NCB	NO	NO	Post	Jan 10-June 2011

Note: ICB- International competitive bidding; NCB - National competitive bidding

III. Selection of Consultants

Prior Review Threshold: Selection decisions subject to Prior Review by the World Bank, as stated in Appendix 1 to the Guidelines Selection and Employment of Consultants:

	Selection Method	Contract amount (US\$ equivalent)	Subject to Prior Review
1.	Quality and Cost-Based Selection (QCBS)	= > 200,000	All
2.	Quality Based Selection / Fixed Budget / Least Cost / Consultant's Qualifications (firms)	< 200,000	First two contracts
3.	Single Source (SS) / Firms	Regardless of value	All
4.	Individual Consultants (IC)	> = 100,000	All
5.	Training (Annual Plan)	Regardless of value	All

All TORs regardless of the value of the contract are subject to IDA prior review.

1. **Short list comprising entirely of national consultants:** Short list of consultants for services, estimated to cost less than US\$100,000 equivalent per contract, may comprise entirely of national consultants in accordance with this procurement plan

2. **Any Other Special Selection Arrangements:** N/A

Consultancy Assignments with Selection Methods and Time Schedule

No.	Description of Assignment	Estimated Cost (US\$)	Selection Method	Review by the World Bank	Expected Proposal Submission
1.	Works supervision for the construction of Gatsibo 8 land husbandry infrastructure	107,800	QCBS	Post	August 2010
	Works supervision for the construction of Karongi 12 land husbandry infrastructure	224,600	QCBS	Post	August 2010
	Works supervision for the construction of Karongi 13 land husbandry infrastructure	49,700	QCBS	Post	August 2010
	Works supervision for the construction of Nyanza 23 land husbandry infrastructure	119,700	QCBS	Post	August 2010
2.	Works supervision for the construction of Gatsibo 8 irrigation infrastructure	5,000	QCBS	Post	Oct 2010
3	Works supervision for the construction of Karongi 12 irrigation infrastructure	2,400	QCBS	Post	Oct 2010
4	Works supervision for the construction of	2,500	QCBS	Post	Oct 2010

5	Karongi 13 irrigation infrastructure Works supervision for the construction of Nyanza 23 irrigation infrastructure	3,400	QCBS	Post	Oct 2010
6	Works supervision for Gatsibo 8 water harvesting infrastructure	16,700	QCBS	Post	June 2010
7	Works supervision for Karongi 12 water harvesting infrastructure	47,000	QCBS	Post	May 2010
8	Works supervision for Karongi 13 water harvesting infrastructure	75,100	QCBS	Post	May 2010
9	Works supervision for Nyanza 23 water harvesting infrastructure	24,100	QCBS	Post	June 2010
10.	Recruitment of staff in LWH headquarter and in District Offices	3,500 (multiple contracts)	IC	Post	Oct 2009
11.	Recruitment of consultants for community mobilization, communication and gender activities	60,000, (multiple contracts)	IC	Post	April 2010
12.	Recruitment of consultants for the training of farmers and their organizations	5,000 (multiple contracts)	QCBS	Post	May 2010
13.	Recruitment of consultants for the training of LWH staff and MINAGRI agencies	2,000 (multiple contracts)	IC	Post	March 2010
14.	Recruitment of consultants for rural finance capacity building	25,000	IC	Post	July 2010
15.	Recruitment of consultant for rural leasing activities (training & logistics)		IC	Post	Sept 2010
16	Technical assistance for post harvest investments	3,000,000	QCBS	Post	Feb 2011
17.	Financial Audit	20,000	LCS	Post	Dec 2010
18.	Recruitment of an external consultant for the monitoring of LWH activities	30,000	IC	Post	Dec 2010

Note. QCBS: Quality and Cost Based Selection

CQS: Selection Based on Consultants Qualification

LCS: Least Cost selection

IC: Individual Consultant (Comparison of 3 CVs in accordance with Chapter V of the Guidelines)

Annex 9: Economic and Financial Analysis

RWANDA: Land Husbandry, Water Harvesting and Hillside Irrigation Project

1. The planned Land Husbandry, Water Harvesting and Hillside Irrigation (LWH) project addresses hillside and irrigated watershed development in a holistic way, with an integrated set of interventions and mutually-reinforcing activities to increase agricultural productivity and farmers' income on hillsides in selected rural areas. Project activities will bring different types of benefits affecting different areas. Land husbandry, water harvesting and hillside irrigation will significantly raise production and productivity; reduce production risk and mitigate the effects of droughts; effectively retain sediment; and contribute to flood control. To complement these land management and infrastructure investments, institutional and market development are also needed to ensure that the benefits will be attained and be maintained over long period of time. Both aspects receive strong support from the Project. This annex covers both economic and financial analysis. The economic and financial costs and benefits of the project were estimated and compared to estimate the net present value (NPV) and economic rates of return (ERR) and financial rate of return (FRR).

2. The project will provide essential software and hardware investment for hillside intensification. For the purposes of the economic and financial analysis, these investments are assumed to be undertaken in 6 sample project sites preliminarily identified in the Government program, covering a total of 4,822 hectares (see table A9.1). Roughly one quarter of each site will be irrigated (the "command area"); the harvesting infrastructure of dam and reservoir will be roughly 5% of the site surface; and the remaining area will be under comprehensive land husbandry development and downstream reservoir protection. Direct beneficiaries from the LWH project include women and men smallholder farmers producing both irrigated and rainfed crops in the project site, totalling about 5000-6000 households. About 70 percent of the households in those 6 sites are defined as poor and about 65 percent of these households own less than 0.5 ha.

Table A9.1. Total area coverage of the project.

Potential Site	Area (in hectares)			
	Total	Reservoir	Non-irrigated	Irrigated
1	540	10	447	83
2	300	7	235	58
3	1172	7	930	235
4	1749	11	1363	375
5	358	10	275	73
6	703	47	536	120
Total	4822	92	3786	944

1. COSTS

3. For the purposes of the Economic and Financial Analysis (EFA), the LWH Project, which will run for four years and has two main technical components, is assumed to amount to a total of US\$45 million (including physical and price contingencies). The first component is the Capacity Development and Institutional Strengthening for Hillside Intensification, broken down into 4 sub-components: (i) Support to Farmer Organizations; (ii) Support to Improving Extension System; (iii) Support to Marketing and Rural Finance; and (iv) Support to MINAGRI and its Agencies. The second component is the Infrastructure for Hillside Intensification, composed of 3 sub-components: (i) Land Husbandry Infrastructure; (ii) Water Harvesting Infrastructure; and (iii) Irrigation Infrastructure. An additional component is included for effective project management within the new sector-wide approach (SWAp) at MINAGRI. From the point of view of the economic and financial analysis, these three components represent one integrated package and cannot be treated separately. Resettlement costs, environmental safeguards and soil erosion control measures are included in the project costs, which are integral part of the irrigation investment.

4. The technical life of these assets was estimated to be 25-50 years for irrigation infrastructure and 50-100 years for soil conservation measures, including radical terraces. This analysis adopted the most conservative figure and estimated the cost and benefit stream for a 50-year period; and assumed that water harvesting and irrigation infrastructure would be effective for 25 years, and thus a new set of investment for these infrastructure would be needed in Year 26.

5. After the 4-year project, the government would be expected to continue with the maintenance and recurring costs for the project to be sustained. This analysis assumed that the required annual costs to maintain the project would be equal to the last year's (Year 4) cost. A new set of resettlement costs and new set of investments for institutional and market development were also assumed to be needed by Year 26, which is conservative.

6. This analysis used a discount rate of 12 percent, which is the most appropriate given the scarcity of capital in Rwanda and being the standard rate mostly used as cost of capital in Rwanda projects and in similar contexts in Africa region. Given these assumptions, the present value of the cost of LWH Project is US\$68.9 million.

2. BENEFITS

7. Project activities financed through LWH are expected to generate three main benefit streams: (i) on-site private benefits within the project area; (ii) downstream benefits of the project area; and (iii) global public benefits beyond the project areas. Some of these are more easily quantifiable than others.

8. Downstream public benefits are those positive externalities essentially related to the ecological function of land and water which produces on-site effects as well as trans-boundary effects at a larger level (off-site). They can come from reduced sediment loads and reduced flood risks which can be measured through maintenance costs to reduce sediment loads in river; reduction on the cost of flood protection; and/or reduction of capital costs for irrigation system.

9. Global public benefits include all benefits that can accrue to everybody including local, national and global communities. They can be either direct benefits or externalities, including direct use of values provision for genetic materials and indirect use value in the form of carbon sequestration.

10. Critical to the estimation of benefit streams from the LWH project was determining the “without project” or counterfactual scenario, in which incremental increases in productivity and income were identified. Socioeconomics studies in a sample of 6 potential project sites were conducted to determine the current crops, production, yield levels, farm-gate prices, economic activities and status of households. Representative farm models were developed using 2008 levels as the baseline data.

11. Both financial and economic analyses were undertaken. First, financial analysis was estimated using markets prices and by calculating the direct benefits to beneficiaries at the sample project site. Second, economic analysis was estimated using the financial prices as a starting point and then adjusting them with their economic or shadow price and adding the externalities beyond the project site to reflect the value to the wider society. Both analyses used the same financial prices as economic prices for tradable goods. In 2008, there were no major policy distortions affecting the prices of inputs and outputs, so financial prices and economic prices for tradable goods were essentially identical, similar to the assumption made by RSSP2. Trade barriers with major trading partners (Uganda, Kenya, Burundi, and Tanzania) are negligible following the accession of Rwanda to the East Africa Community customs union, and exchange rate distortions are minimal. However, financial and economic analyses differed on several fronts. First, the difference between the financial and economic analysis is the use of market versus shadow price of unpaid family labor. Shadow price was assigned a value of RWF480 per day, which is 40 percent below the market price of unskilled hired labor used in agricultural production (which is valued at RWF800). Second, financial analysis calculated incremental income net of or excluding taxes and interest rate payment, while economic analysis estimated the gross margins and included taxes nor interest rate payments in the calculation. Third, externalities such as reduction of sedimentation in rivers, reservoir and other downstream areas as well as global benefits of mitigating global warming were included in the economic analysis. All these three items led to a higher net present value and higher rates of return from economic analysis compared to financial analysis ($ERR > FRR$).

2.1 ON-SITE PRIVATE BENEFITS

12. On-site private benefit streams are tangible benefits at the project area which mainly come through direct income increases, food security and risk reduction, increase in employment and labor productivity, and securing long-term income opportunities. These include:

- i. Increased value of production in non-irrigated areas
- ii. Crop diversification and increased value of increase in value of production in irrigated areas
- iii. Increased income from trees, shrubs, and grass grown in downstream reservoir protection areas
- iv. Avoided yield loss due to soil fertility degradation and soil erosion

- v. Increased value of livestock production
- vi. Increased employment opportunities
- vii. Improved access to water

2.1.1 Increased value of production in non-irrigated areas

13. Within the entire water catchment area and command area catchment, prevailing cropping patterns will be maintained and the benefit streams from the LWH Project will come from increased and more stable crop production because of increased yield. Improved soil conservation would improve the quality of the soil as a result of reduced erosion through slowed down run-off and through putting up soil conservation measures to contain the run-off. As a result of livestock diversification, there will be an increase in the volumes of manure used to replenish soil fertility. Continued use of this manure will improve the soil quality and sustainably enhance soil fertility, thus improving the yields.

14. Past studies show that yield increase due to soil and water conservation ranges from 45 to 216 percent.⁴⁹ Based on the current cropping practices in the project sites, a conservative increase in yield of 30 percent was used for traditional annual crops and 50 percent for perennial crops; and 70 percent for irrigated crops. The benefit attributed to the LWH project was the difference between the gross margin of the current cropping pattern and new gross margin with these increases in yield valued using local farm-gate prices. Annual benefit amounts to US\$5.2 million and the present value is US\$50.8 million, assuming a 50-year period of benefit stream and 12 percent discount rate (see table A9.2).

2.1.2 Increased value of production in irrigated areas

15. For irrigated areas, a conservative increase in yield of 70 percent was adopted for coffee and plantain, taken (along with others—see below) to proxy as sample irrigated crops for the 6 potential project sites. In addition, irrigation will also enable farming expanding coffee and plantain production and diversify into other high-value crops. A recent horticultural demand study conducted for Rwanda indicates a substantial range of products with viable markets that can be grown as part of the LWH. These products will form part of the options assessment and package from which beneficiaries will choose. For the purposes of the analysis, assumptions on a restricted set of products were made in order to conduct the analysis. So, in addition to coffee and plantain, products such as avocado, tea, and pineapple were also considered. Benefit from the LWH Project is the difference between the gross margins of the projected yields of the high value crops valued using exporters' farm-gate prices and gross margins of the current yields under the current cropping pattern valued using their respective local prices.

16. In addition, areas that had previously been water-logged during the rainy season would be put into productive use without the risk of losing all crops as was previously the case, when

⁴⁹ See Bekele-Tesemma et al. (Final LWH Project Document, MINAGRI) for a thorough literature review of this issue.

submerged in water. These were mainly the command areas. Benefits here were based on the difference in gross margins of the current and projected production of beans, which would be incorporated in 70 percent of the command area in the 6 potential project sites.

17. Annual benefit from high value crop diversification and intercropping (beans) in irrigated areas amounts to US\$6.4 million and the present value is US\$42.5 million, assuming a 50-year period of benefit stream and 12 percent discount rate (see table A9.2).

2.1.3 Increased value of production in downstream reservoir protection areas

18. The silt-trap zone would enable the development of approximately 25 hectares of forest plantation for each potential project site for transmission pole/construction timber worth approximately US\$120,000 at farm-gate prices. Assuming the harvest to be conducted every 5 years, the annual income to be obtained each project site will be US\$24,000. In addition, raw-wood from the canopy and side branches can also be raw materials for production of charcoal which is worth US\$9,600 per project site. Lastly, 5 tons of livestock feeds can be produced per hectare per season, producing a total of US\$6,250 per site per year. Benefits from the silt-trap zones of the LWH Project amount to US\$233,000 average per year and present value of US\$1.5 million, assuming a 50-year period of benefit stream and 12 percent discount rate.

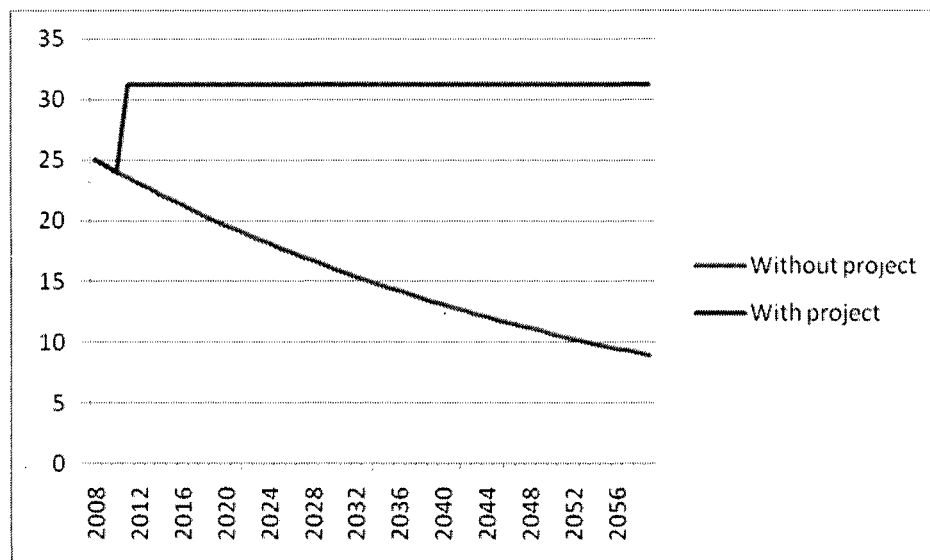
2.1.4 Avoided yield loss over the years “without project”

19. Without the LWH Project, yield loss on hillsides caused by soil erosion and nutrient depletion over the years can be substantial. A run-off experiment plot experiment conducted in Busogo and Musanze districts of Rwanda in 2004, which involved different crops (wheat, maize, soybean, peas, and potato), planted on a 12 percent slope, revealed soil losses ranging from 2.2 to 13.7 tons per hectare.⁵⁰ Studies carried out to quantify the impact of soil erosion on maize grain yield on Kenyan hillsides have estimated yield losses ranging from 1.3 to 5.2 percent per cm of soil lost, which translates to predicted annual decline in yields ranging from 2.5 to 3.8 percent.⁵¹ Due to the severity of problem in the project sites and upon consultation with Government experts, a conservative figure of 2 percent yield loss per hectare per year was used in the estimation (see figure A9.1). The value of yield loss that will be avoided per year in 6 project sites is US\$222,000 and the present value is US\$2.5 million, assuming a 50-year period of benefit stream and 12-percent discount rate.

⁵⁰ Esdras, N., and U. Francois. 2005. “Memoir on the ‘Effect of Common Crops on Soil and Water Losses at 12% Slope in Ruhengeri Region of Rwanda,’” A Case Study of ISAE Farm, Cited in RSSP2 Project Appraisal Document.

⁵¹ Nkonya, E., et al. 2007. “Economic and Financial Analysis of the Agricultural Productivity and Sustainable Land Management Project, Kenya,” Cited in RSSP2 Project Appraisal Document.

Figure A9.1 Estimated yield (in ton/ha) with and without project, 2008-2059



2.1.5 Increased value of livestock production

20. The LWH does not invest directly in livestock production activities, but the major constraint hampering the development of the livestock sector in Rwanda is arguably the inadequacy of animal feed both in quality and quantity. This is a consequence of poor and narrow pastures, severe land constraints and water shortage, among other issues. The implementation of the project interventions will indirectly lead to the development of the livestock subsector as a result of increased quality fodder production which will be harvested from fodder trees and perennial forage legumes intended for the water catchment protection through the Project interventions, thus improving the low productivity of livestock on these farms. This will complement the Government's initiative on one-cow per family program, thus improving the welfare of the farmers within the project site, through provision of required nutrients at household level and income that may be used to purchase essential goods and services. Availability of fodder for livestock and improved access to water for livestock will be an incentive for farmers to diversify and expand their livestock enterprises and enhance adoption rates of improved breeds which are early maturing and high yielders. The LWH Project would also enable diversification of livestock enterprises as they would be economically empowered through crop produce sales to purchase livestock if they chose, to upgrade the local breeds kept using improved breeds, or expansion of existing enterprises. There would be acquisition of livestock for those who had no livestock while an increment for those who had some livestock. The introduction of fodder trees that will supplement livestock feed will improve the production of dairy cattle the farmers will keep.

21. A dairy cow under proper management may produce an estimated 4000 liters of milk per year. The cost of 1 liters of milk in the study area was valued at RWF200 (US\$0.40). Currently, the mean lactation period is 260 days per year with mean daily milk yields of 5.2 liters, thus implying 1,352 liters of milk per year. From estimation of livestock model, additional value of milk production from the LWH Project is estimated to be US\$2.2 million per year for all 6

potential sites, and the present value is US\$16.2 million, assuming a 50-year period of benefit stream and 12-percent discount rate (see table A9.2).

2.1.6 Increased income from greater employment opportunities

22. The LWH project would not only benefit farmers within the irrigable area but would also create employment opportunities for other community members who will participate in labor provision in the farms (casual laboring) as well as stockists who will provide inputs and shopkeepers who stock household necessities. In the command area, the labor cost is estimated at US\$167 per hectare per year for production of plantain or avocado respectively, thus implying deployment of human labor valued at US\$181,450 in the command area of 6 potential sites per year, and present value of US\$1.3 million, assuming a 50-year period of benefit stream and 12-percent discount rate.

2.1.7 Improved access to water

23. Provision of water in the reservoir will save the community from fetching water at distance, even during the dry season, thus utilizing the time saved in tending to livestock, crop enterprises or household chores. Non-irrigation benefits of water storage facilities were included in the analysis. They intend to use this water for livestock as well as domestic purposes such as washing clothes, bathing, cleaning and feeding livestock. On average, households used 5 jerricans of water (20-litre jerricans) each day which they fetched from the streams or boreholes. Borehole water was sold at RWF10, which limited the amount of water that would be utilized. Without financial constraints, interviewed community members indicated that they required 8 jerricans of water each day for domestic purposes. Additionally, the time spent while going to fetch the water was estimated at 60 minutes and one person would only carry one jerrican at a time. Thus, each household on average requires 480 minutes to fetch water daily, i.e., 8 hours valued at RWF1,000 (US\$1.80) based on the wage rate of RWF1,000 (US\$1.80) per 8-hour labor day) and an additional RWF80 for the water. This translates to RWF394,200 (US\$723) per year per household. For all 6 potential project sites, a total savings is worth US\$2.2 million per year and present value of US\$15.9 million, assuming a 50-year period of benefit stream and 12-percent discount rate (see table A9.2).

24. To sum, on-site private financial benefits are valued at US\$17.5 million average per year, with present financial value of US\$130.8 million over 50 years. Economic values are slight higher by US\$1.3 million average per year and US\$9.2 million present value over 50 years.

Table A9.2. Average annual on-site private benefits and present value of LWH Project, using financial versus economic prices

Benefit Item	Average Annual Financial Value (in US\$ million)	Present Financial Value (in US\$ million, 12% discount rate)	Average Annual Economic Value (in US\$ million)	Present Economic Value (in US\$ million, 50-year period, 12% discount rate)
1. Increased value of production in non-irrigated areas	6.1	50.9	6.5	54.4
2. Increased value of production from irrigated areas	6.5	42.5	6.9	45.5
3. Increased value of production from downstream reservoir protection areas	0.2	1.5	0.3	1.6
4. Avoided yield loss due to soil fertility degradation and soil erosion	0.2	2.5	0.2	2.7
5. Increased value of livestock production	2.2	16.2	2.3	17.4
6. Increased employment opportunities	0.2	1.3	0.2	1.4
7. Improved access to water	2.1	15.9	2.3	17.0
Total Benefits	17.5	130.8	18.8	140.0

2.2 DOWNSTREAM PUBLIC BENEFITS

25. LWH project will reduce sediment loads in river, lower variability in water flows and reduce floods risk. Reduce sedimentation makes the river more stable reducing maintenance costs and lower the rise of riverbed. Irrigation system becomes efficient by reducing sediment flow and downstream reservoir sedimentation.

2.2.1 Savings from cost of sediment load removal

26. In addition to avoidance of yield losses, land husbandry activities under LWH can contribute to reduce sedimentation in rivers and downstream reservoirs. As a measure of this benefit stream, an estimate of the potential cost of removing sediment loads was used as a proxy. In the literature, cost of removing sediment loads is estimated to be US\$2.50 per ton (used in Madagascar Irrigation and Watershed Management Project) and US\$8-25 tons (used in Kenya APSLM Project). An approximate midpoint of US\$14 was used for LWH. Afforestation activity on about 120,000 hectares is estimated to reduce sediment loads of 216,496 tons per year, which is approximately 1.8 ton per ha per year (in the Kenya APSLM project); while 0.45 ton per ha per year was used in the IWMP in Madagascar. An approximate midpoint of 1.125 ton per ha per year was used for LWH or 5425 ton per year (given the 4800-ha coverage of LWH), valued at

US\$76,000 per year and present value amounting to US\$0.6 million over 50-year period (see table A9.3).

2.2.2 Reduction of capital cost of irrigation schemes

27. Additional benefits come from soil erosion control which is expected to reduce capital costs of irrigation schemes. In Madagascar IWMP, the reduction in capital cost in the irrigation schemes amounts by US\$5 per hectare the first year after project completion, increasing by an additional US\$1 each year. Given the similar nature of the project, size of project, and similar extent of soil erosion problems in Madagascar and Rwanda, these estimates were used in the EFA for LWH. This additional benefit was estimated to be about US\$24,000 in Year 2, and US\$29,000 in Year 3 onwards. This translates to present value amounting to US\$0.2 million over 50-year period (see table A9.3).

2.3 GLOBAL PUBLIC BENEFITS

28. The links between land degradation and CO₂ emission are numerous and complex, but studies from several countries suggest that SLM measures such as those to be supported under LWH contribute to CO₂ mitigation by at least 0.5 tons of Carbon per hectare per year (or 1.785 tons of CO₂ per ha per year using 3.57 transformation ratio). The estimate of 0.5 tons of C was used in the Kenya Agricultural Productivity and SLM Project and the Western Kenya CDD and Flood Mitigation Project. It can go as high as 12 tons of C from 5-year old forest land used in the Western Kenya Integrated Ecosystem Management Project and even as high as 20 tons of C for regenerated closed areas to 40 tons of C for afforested land used in the Loess Plateau Watershed Rehabilitation Project. For LWH, the conservative estimate of 0.5 tons of C was used as the nature of carbon of SLM proposed in the LWH project is closer to the nature of SLM measures used in the Kenya Ag Productivity and SLM Project and the Western Kenya CDD and Flood Mitigation Project. Using a transformation ratio of 3.57 and a total of 4,800 hectares covered in LWH project, the total CO₂ sequestered is 8,607 tons per year. After 5 years, the trees grown on the silt trap zones (about 80 hectares for the 6 project sites), will be mature trees and can sequester carbon more, so the rate of 12 tons of C, used in the Western Kenya Integrated Ecosystem Management Project, was adopted. Year 1 to 5 have an estimated 8,607 tons of CO₂ sequestered per year and Year 6 onwards have an estimated 12,000 tons of CO₂ sequestered per year.

29. In terms of value of C or CO₂ sequestered, activities that result in increased carbon sequestration in Biocarbon Fund projects are typically compensated at a level of US\$4-5 per ton of CO₂. Under LWH Project, carbon sequestration activities will not be compensated, so the benefits from reduced carbon emissions will accrue to global society and so economic or social price would be more appropriate to use in this analysis. Estimates of social price used by RSSP2 in Rwanda is \$20 per ton of CO₂, approximate midpoint of US\$17-25,⁵² which is the range of estimates of social cost of CO₂ emission or pollution tax required to keep CO₂ emissions at the socially optimal level from numerous literature on carbon finance. Other studies also point to a

⁵² Source: Frankhauser, S. 1995. *Valuing Climate Change: The Economics of the Greenhouse*. London: Earthscan.

range of US\$5-125 per ton of CO₂ as the economic value of carbon sequestration.⁵³ The EFA for LWH used a conservative estimate and adopted the one used in RSSP2, which is \$20 per ton of CO₂, which gives a total economic value of CO₂ sequestered equal to US\$172,000 per year in Year 1-5 and US\$241,000 in Year 6 onwards. This translates to present value amounting to US\$1.7 million over 50-year period (see table A9.3).

30. With all the benefits streams added together (on-site private benefits, downstream and global public benefits), average annual economic benefits of LWH Project is estimated to be US\$19.1 million and its present economic value of these benefits is US\$142.7 million. Comparing the Project's costs and benefits, net present economic value of LWH Project is US\$73.8 million while the net present financial value is US\$61.9 million (see table A9.3). FRR is 28 percent while ERR is 29 percent. Using shadow prices and incorporating externalities gives an additional 1 percent rate of return compared to using financial prices. These figures show high financial and economic returns on investment. With total 4,822 ha potentially to be covered in LWH Project, net present economic value per ha is US\$15,300 and net economic value per year per ha is US\$2,800. With average land holding of 1 ha per household, the net present financial value per ha roughly translates to US\$12,837 per household over 50-year period. In terms of annual nominal value, this is roughly an increase of US\$2,468 income over 50 years, or US\$49 or % increase in household income per year.

31. If the Government's entire LWH Program (with total hectare 30,250 ha) is considered, the expected FRR and ERR would be close to that of the Bank-financed LWH Project, given similar conditions of potential project sites. The expected economic NPV would be US\$463 million over 50-years and the net economic value per year is US\$84.7 million for the total Phase 1 and 2.

⁵³ Sources: Cavatassi, Romina. 2004. "Valuation Methods for Environmental Benefits in Forestry and Watershed Investment Projects," ESA Working Paper No. 04-01, FAO; and Dutilly-Diane, Celine, et al.. 2007. "Could Payments for Environmental Services Improve Rangeland Management in Central Asia, West Asia and North Africa?" CAPRI Working Paper No. 62, International Food Policy Research Institute.

Table A9.3. Net present value (NPV) at 12-percent discount rate and IRR from financial versus economic analysis

Benefit Item	Average Annual Financial Value (in US\$ million)	Present Financial Value (in US\$ million, 50-year period, 12% discount rate)	Average Annual Economic Value (in US\$ million)	Present Economic Value (in US\$ million, 50-year period, 12% discount rate)
1. Increased value of production in non-irrigated areas	6.1	50.9	6.5	54.4
2. Increased value of production from irrigated areas	6.5	42.5	6.9	45.5
3. Increased value of production from downstream reservoir protection areas	0.2	1.5	0.3	1.6
4. Avoided yield loss due to soil fertility degradation and soil erosion	0.2	2.5	0.2	2.7
5. Increased value of livestock production	2.2	16.2	2.3	17.4
6. Increased employment opportunities	0.2	1.3	0.2	1.4
7. Improved access to water	2.1	15.9	2.3	17.0
8. Reduction of sediment load			0.1	0.6
9. Reduction of capital cost of irrigation			0.0	0.2
10. Carbon sequestration			0.2	1.7
Total Benefits	17.5	130.8	19.1	142.7
Total Costs	5.6	68.9	5.6	68.9
IRR				
IRR		FRR=28%		ERR=29%

2.4 OTHER BENEFITS AND COSTS NOT QUANTIFIED

32. In addition to using conservative values for the benefit stream, there are other benefits that are difficult to quantify. According to project-related socioeconomic survey on potential sites,

farmers were optimistic that through the project they would increase food production thus making it possible for community members to acquire available food. This would imply that if the production is improved, there will be more food, thus resulting in a decrease in prices hence making it affordable to all the members within the community to have access to food. Farmers indicated that there would be improved nutrition as a result of provision of the needed nutrients from the diversity of crops they would grow as well as livestock products. Additionally, they indicated that they would be economically empowered after sale of surplus produce thus purchasing foods that they will not be able to produce.

33. Moreover, institutional, technical and organizational capacity will be improved as a result of the LWH Project, but the effect of capacity development is difficult to quantify and thus it was not part of this analysis.

34. On the other hand, there are also other potential costs or negative externalities that were not quantified such as effect on migration and fears of increased water-related diseases due to water reservoir. Households interviewed during the socioeconomic surveys feared that there would be an increase in the incidences of malaria because the water reservoir would serve as a breeding ground for mosquitoes. Having identified these problems as the onset of the project design, sensitization and safeguards are incorporated into the project design and internalized and reflected in the costs. Another concern is that poor migrants from other parts of Rwanda might migrate as casual labor to take advantage of increased agricultural productivity in the potential project sites. If migration to these areas would be substantial over the years, it may eventually put pressure on deforestation. On the other hand, this potential migration and its potential pressures to water and forests in the project sites can be off-set by potential impact of agricultural intensification on reducing expansion of agricultural areas to forests and marginal areas and Project's potential effect on reducing rural to urban migration because of improved employment opportunities, as well as safeguards measures in the Project.

35. Based on the above, there are no substantive negative externalities not accounted for in this analysis that would radically change the resultant high financial and economic profitability of the LWH Project. Instead, unaccounted additional benefits of capacity development and nutrition strengthen our earlier assumption that calculated economic and financial values and rates of return from the LWH project are lower-bound and conservative estimates. It confirms the conclusion that LWH Project yield strong financial and economic viability and potentially worthwhile investment.

3. SENSITIVITY ANALYSIS

36. To test the robustness of the estimates and sensitivity of the findings to changes in assumptions and key variables, different scenarios were estimated as shown in Table A9.4. Despite being in pessimistic scenarios, such as reduction of yield increases by half as what was originally used in the estimation above, reduction of farm-gate prices of high-value crops or traditional crops by 20 percent, and reduction of the increased value of livestock production by 50 percent from what was originally used in the estimation above, the FRR and ERR from the LWH Project are still very high compared to 12-percent cost of capital. Despite having higher FRR and ERR due to inclusion of more quantifiable benefits and costs, the results of this analysis are consistent with the Government's original economic and financial analysis for the

larger LWH Program, which used a series of sensitivity analyses adopting higher financing/loan requirements, higher maintenance costs, higher and lower yield increases, decrease in output prices, other crops to be planted in the irrigated and non-irrigated lands, and even an assumed shadow exchange rate. Thus, estimates are robust and sufficient evidence shows high financial and economic viability of LWH Project and of the larger LWH Program.

Table A9.4. FRR and ERR of different scenarios under sensitivity analysis

Scenarios	FRR	ERR
Original scenario: 70% increase in yield for irrigated crops; 30% increase in yield for traditional annual crops; 50% increase in yield for perennial crops	28	29
OPTIMISTIC		
1. 100% increase in yield for irrigated crops and perennial crops; 60% increase in yield for traditional annual crops	33	34
PESSIMISTIC		
2. 35% increase in yield for irrigated crops; 15% increase in yield for traditional annual crops; 25% increase in yield for perennial crops	25	26
3. 20% reduction in exporters' farm-gate prices for irrigated crops compared to original scenario	24	25
4. 20% reduction in local farm-gates prices for traditional crops because of more abundant supply compared to original scenario	22	23
5. 50% reduction in the original increase in livestock production value	23	24

Annex 10: Safeguard Policy Issues

RWANDA: Land Husbandry, Water Harvesting and Hillside Irrigation Project

1. The main environmental safeguards issues for the Project relate to (i) hydrological impact of water harvesting, water abstraction and changes to water outflows from the dams and irrigation systems, changes in water table and soil salinity, changes in water quality and eutrophication and siltation of water bodies, and associated impacts on downstream aquatic habitats and biodiversity, (ii) radical terracing and other earthworks in the command area and associated impacts on soil as well as potential increase in the use of agro-chemicals and spread of agricultural weeds; (iii) afforestation of steep slopes, establishment of no-use areas on the most fragile slopes and other land husbandry measures and associated impacts from potential technical or institutional failure of these measures, and (iv) human health and safety impacts from waterborne diseases. The key social safeguard issues arise from permanent and temporary land-taking that is required for establishment of water reservoirs, development of primary and secondary water distribution channels, and construction of terraces.

2. The project may have limited adverse environmental and social impacts, triggering the OP/BP 4.01 on Environmental Assessment as well as safeguard policies on Natural Habitats (OP/BP 4.04); Forests (OP/BP 4.36), Pest Management (OP/BP 4.09); Physical Cultural Resources (OP/BP 4.11); Involuntary Resettlement (OP/BP 4.12); Safety of Dams (OP/BP 4.37) and Projects on International Waterways (OP/BP 7.50). LWH is rated as environmental assessment category “B” project.

Safeguard Policies Triggered	Yes	No	TBD
Environmental Assessment (OP/BP 4.01)	X		
OP 4.01 is triggered due to potential adverse environmental impacts of dams, irrigation systems, and radical terracing. The EA summarizes the potential adverse environmental impacts of LWH activities, clarifying mitigation in the ESMF.			
Natural Habitats (OP/BP 4.04)	X		
OP 4.04 is triggered due to potential impacts that the Project may have on natural habitats on target Project sites, as well as on downstream wetlands and water bodies, and the vegetation cover in the catchments. The target sites identified so far are heavily cultivated already, and no site-level natural habitats have been identified through field studies so far.			
Forests (OP/BP 4.36)	X		
The EA confirms that the majority of Project area is heavily cultivated. OP 4.36 is triggered due to planned <i>afforestation</i> of catchments and protection of the existing catchment forests, which will (positively) affect quality and health of forests. No commercial logging will be supported by the Project. Strengthening of the management of catchment forests for watershed protection will take place through capacity building program and extension services under the Project.			

Safeguard Policies Triggered	Yes	No	TBD
Pest Management (OP 4.09)	X		
OP 4.09 is triggered due to the possibility for induced increase in the use of agro-chemicals associated with intensified agriculture, although the organic market is one of the primary potential LWH outlets. The EA concludes that if inorganic pesticides are used, that based on the average use levels, the magnitude of impact is low but needs good management under a PMP.			
Physical Cultural Resources (OP/BP 4.11)	X		
OP 4.11 is triggered due to the possibility of chance finds of physical cultural resources during earthworks for dam and irrigation infrastructure. Such finds will be managed through chance finds procedures.			
Indigenous Peoples (OP/BP 4.10)		X	
There are no known ethnic groups categorized as indigenous people in Rwanda (the Twa) in the project area. This issue was assessed and clarified in a special safeguards mission (09/2008) at an early stage of project identification and confirmed through two subsequent levels of screening (please see also below).			
Involuntary Resettlement (OP/BP 4.12)	X		
OP 4.12 is triggered by temporary and permanent land taking for the Project infrastructure that includes terraces, valley dams and reservoirs, and water conveyance structures.			
Safety of Dams (OP/BP 4.37)	X		
Dam Safety is triggered through construction of dams, including dams higher than 15 meters. Compliance will be ensured through dam safety measures integrated in the EMPs, operating procedures, as well as self-standing dam safety plans for large dams.			
Projects on International Waterways (OP/BP 7.50)	X		
OP 7.50 is triggered since the project will affect quantity and quality of international waterways in the Nile Basin.			
Projects in Disputed Areas (OP/BP 7.60)		X	

Safeguards Management

OP4.01, OP4.04, OP4.36 and OP4.11

3. The environmental assessment, forests, and cultural resources safeguards issues will be managed through preparation and implementation of the following instruments: (i) overall

Environmental Assessment which includes consideration of cumulative impacts and framework EMP; (ii) an Environmental and Social Management Framework (ESMF) which guides the screening of project investments for potential adverse environmental and social impacts and triggering of other safeguard policies, including those on forests and natural resources, as well as guiding preparation of site specific environment assessments and management plans; (iii) specific site (catchment) Environmental Management Plans (EMPs)⁵⁴, and, (iv) a Pest Management Plan (PMP). The ESMF also provides guidance on the mitigation and handling of chance finds of physical cultural resources during earthworks. To ensure compliance with the forests policy, the project will promote sustainable management of existing catchment forests for watershed protection through capacity building under Component A4. The EA, ESMF and PMP were disclosed both in country and in the Bank's Infoshop in early August 2009. In addition, as part of the Project support for the development of the Government's Common Framework for Engagement (CFE) for LWH financiers, the ESMF will be incorporated into the CFE. That is, in addition to its use by the Project in, it will guide other financiers in their social and environmental site management.

OP4.09

4. LWH will promote IPM and export orientation to organic markets, and it will not finance pesticides. However, increased pesticide use is possible with agricultural intensification in general and some LWH market niches may be other than organic. LWH has therefore developed a pest management plan (PMP) drawing on the experience of other intensification operations in Rwanda (i.e. RSSP 2) which was cleared by ASPEN and disclosed in the Infoshop on 7 August 2009.

5. The PMP assesses relevant pest issues in Rwanda and evaluates current farmer pest control practices. It calls for the use of IPM practices and details those IPM practices which have been shown to be efficacious in Rwanda. The PMP also provides guidance for limited and appropriate use of pesticides when non-chemical means are insufficient and chemical means are technically and economically justified.

OP4.12

6. The OP/BP 4.12 is applicable because LWH will support the development of land husbandry and water harvesting infrastructure like radical terraces, valley dams and reservoirs and hillside irrigation infrastructure that includes water distributions, both of which may trigger land acquisition. Land requirements for purposes of construction of terraces, dams and ancillary facilities may permanently or temporarily limit access to both public or private land and other assets by local communities. Involuntary resettlement policy is triggered not only when land acquisition is evident but also where there is no physical relocation and project activities impact assets or restrict access to other natural resources or negatively impact on livelihoods. Since the scope and other details of dam and water distribution construction work, including the exact locations of the infrastructure are not yet confirmed, a Resettlement Policy Framework (RPF) has been prepared and has been disclosed both in country (7 August, 2009) and at the Bank's

⁵⁴ EMPs will be cleared and disclosed once completed during implementation.

Infoshop (10 August 2009). The RPF document outlines the principles and procedures for resettlement and or compensation of subproject-affected people, and establishes standards for identifying, assessing and mitigating negative impacts of program supported activities. In addition, the RPF will guide the preparation and implementation of resettlement action plans (RAPs) for each individual sub project that triggers the involuntary resettlement policy once project sites are confirmed.

7. The resettlement action plans would be prepared in consultation with the affected individuals and communities. Resettlement assistance and compensation for losses will also be determined through the same consultative process to ensure that no one is left worse off as a result of the project. Resettlement action plans preparation and implementation are based on existing laws and regulations of Rwanda as well as the World Bank Policy (OP/BP 4.12). The staff of Ministry of Agriculture and Animal Resources (MINAGRI) and those of local authorities will be provided with training necessary to equip them with the skills to screen subproject activities for impacts, prepare RAPs, and implement activities set out in the RPFs and subsequent RAPs. The Ministry together with local level institutions will undertake both desk and field appraisal of the planned interventions, and approve RAPs prior to the commencement of the subprojects. Compensation and resettlement issues will be funded like any other project activity from government funds as indicated in the RPF.

8. The grievance mechanisms have been well laid out in the RPF, and they utilize the existing systems and structures from the lowest levels through local authorities. If all these channels of handling grievances fail, then the aggrieved individuals or communities can resort to Rwanda Courts of Law.

OP4.37

9. Some of the irrigation dams financed by LWH may include dams large enough to trigger the policy on Safety of Dams. In all cases of dam construction, the dams will be designed and their construction supervised by qualified engineering personnel, dam safety measures will be incorporated in the dam operating procedures and communities will be trained on dam safety. Specific provisions relating to the safety of dams have been included in the ESMF and covenants covering these provisions have been included in the Financing Agreement.

10. With the confirmation of site selection and preparation of sites early in implementation, site-specific Dam Safety Plans will be prepared and disclosed for large dams. Like the ESMF, dam safety plan guidelines, satisfactory to the Bank, will be used by the Government's Common Framework for Engagement (CFE) for LWH financiers in the larger Government Program. GoR has adopted guidelines for managing small dams.

OP7.50

11. Because irrigation development under the project will affect the hydrology of catchments that drain into international waterways, Riparian Notification was issued for the Project. Based on the pre-feasibility level estimates, the increased water abstraction from the project will result in a reduction of the mean annual and average dry season discharges by up to 0.04% and 0.33%, respectively in the Kagera basin (at Rusumo Falls). In the Ruzizi basin (at the Lake Kivu source),

the equivalent figures are 0.08% and 0.04% percent. Even though agricultural intensification is an objective of the project and may lead to increased use of inputs (fertilizer, agro-chemicals) the pre-project input use levels are very low and modest increases are not expected to have an adverse impact on water quality, particularly with the Project's pursuit of organic niche markets. In addition, environmental and pest management plans will be implemented to minimize any such impacts. Thus, the project is not expected to have measurable adverse effects on the quantity or quality of water flows to other Riparians.

12. In accordance with OP 7.50, a Riparian Notification was prepared, cleared and issued on August 10, 2009 by the Bank on behalf of the Government of Rwanda. The Ruzizi Basin is part of the Lake Tanganyika Basin, and the riparian states other than Rwanda are Burundi, the Democratic Republic of Congo (DRC), Tanzania, and Zambia. The Kagera Basin is part of the Lake Victoria and Nile River Basins, and the riparian states other than Rwanda are Burundi, the DRC, Egypt, Eritrea, Ethiopia, Kenya, Sudan, Tanzania, and Uganda. Countries were given a response time of 60 days from notification (lapsing October 6, 2009). Six countries responded: Egypt (September 8, 2009), Burundi (October 2, 2009), DRC (October 5, 2009), Kenya (October 7, 2009), Tanzania (October 15, 2009), and Zambia (October 27, 2009). Egypt and Tanzania noted the negligible impact recorded in the Notification, and along with Zambia voiced no concerns, comments or objections. Tanzania suggested that impact on water quality be assessed during implementation, which is provided for under the Project. In addition to their strong support for LWH, Kenya pointed out the general importance of mitigating measures in irrigation for efficiency, erosion and sedimentation, chemical leaching and afforestation. Accordingly, the team responded to the Government of Kenya with the reassurance of a Bank-cleared and publicly disclosed PMP and EIA, as well as pointing out the significant dedicated resources in the Project for afforestation and erosion control (i.e. land husbandry) measures in the Project design, pointing out that a full sub-component of the Project is dedicated to such. Burundi and DRC both indicated a desire to repeat the environmental and water impact technical work with their own experts. The extensive technical studies prepared during Project identification and preparation, as well as the EIA which was cleared and disclosed by the Bank in August 2009, underpin the impact information shared in the Riparian Notification. This technical work confirms that the Project will not cause appreciable harm to the riparians (see above). In its response to the Governments of Burundi and DRC, therefore, the Bank provided the link to the publicly disclosed LWH EIA containing the extensive data and analysis cited as important in their riparian response. All riparian respondents whose letters were received by October 6, 2009, were also provided with a further window of response until November 13, 2009.

Cumulative Impacts

13. Long term impacts include water abstraction and changes to the hydrological regime, and changes in land use and land cover in the catchment and the command area (e.g. afforestation in the catchment, and shift to high value crops in the command area).

14. Cumulative impacts, particularly on hydrology, are possible through future development of other hillside irrigation schemes within the same watershed, and through development of irrigated agriculture in downstream lowland marshes. The cumulative impacts under the LWH project itself are expected to be negligible due to (i) wide distribution of the selected pilot sites, (ii) small size of the irrigation schemes, (iii) low levels of water abstraction, (iv) and

environmental management measures for ensuring adequate outflows, limiting agro-chemical pollution, soil erosion and water losses.

15. Cumulative impacts of hillside and lowland irrigation schemes on downstream wetlands and marshlands are of concern since marshlands in Rwanda have been extensively converted to agricultural uses. Based on official statistics, 94,000 ha of the total 168,000 ha of marshlands have been converted (USAID 2008). Adverse cumulative impacts on downstream marshlands will be considered when screening and selecting proposed sites for development under the project. The potential types of cumulative impacts are largely manageable at the site level, making the sound adherence to the mitigation measures described below essential. To this end, the adoption of the ESMF as part of the Governments' Common Framework of Engagement for all potential financiers of the LWH will be strongly instrumental in the mitigation of cumulative effects across the Government's larger program.

Disclosure of Safeguards Instruments

16. All environmental safeguards documents will be cleared by the Rwanda Environmental Management Authority (REMA) and the Bank. The EIA and ESMF were disclosed at the World Bank's InfoShop on 13 August 2009; and in country 12 August, 2009. A revised ESMF was disclosed in-country on November 10, 2009, and at the Infoshop on November 11, 2009, to reflect requirements relating to the Safety of Dams (OP/BP 4.37) and references to the Government's Guidelines for Managing Small Dams, which have also been disclosed simultaneously. The proposed mitigation measures and their monitoring plans are an integral part of the project design and costs. Site-specific Environmental Assessments, Environmental Management Plans, Dam Safety Plans and Resettlement Action Plans will be disclosed once they are prepared during project implementation.

Consultations with Affected Groups

17. Consultations with communities at the LWH sites, local authorities and national stakeholders were launched in 2008, parallel with the Government's preliminary site identification and pre-feasibility studies, taken place during the development of the LWH concept and funding proposal. Consultations were carried out by a Consultant, whose social specialist and rural sociologist, working alongside engineering and environmental staff. These consultations took the form of community meetings, individual interviews and focus groups. The feedback from the consultations was used to inform project design. Additional consultations took place as a part of preparing the LWH Environmental Assessment, ESMF and Strategic Social Assessment during the remainder of project preparation. Further detailed consultation took place with Bank Safeguards Specialists during the Project Appraisal in September 2009. The consultations revealed that while the community members are keen to see the project implementation to begin, their understanding of the project and resulting changes is limited, and continuous liaison with the affected communities will be necessary to disseminate information, collect feedback, and manage expectations. This observation led to an increase in resources and planned activities under Component A in terms of community mobilization and communication. Consultations were also a part of the preparation of the RPF.

Borrower Capacity to Implement Safeguard Policies

18. Borrower capacity for both environmental and social safeguards implementation is moderately effective, with some weaknesses that the project will address. Rwanda has a dynamic and professionally staffed environmental regulatory agency (REMA) with politically astute leadership and instances of demonstrated effective enforcement of environmental regulations. REMA works closely with the decentralized Environmental Officers who are responsible for site level environmental management of project activities, along with the MINAGRI environmental specialist.

19. However, while the environmental regulatory framework is modern, it is also young and some elements of it are yet to be developed. REMA has been in existence only since 2003, the Organic Law (No 4/2005) on environmental protection since 2005, and the general EIA guidelines since 2006. Sector specific environmental guidelines, e.g. for agriculture, are not yet in place. Demand for REMA services outstrips its staffing, and both REMA and District level environmental staff lack robust implementation experience and technical training specific to dam construction, irrigation development, watershed management, and other technical aspects of LWH – although requisite expertise exists in the consulting sector and academia and can be tapped into for knowledge transfer. Logistical support for adequate implementation and monitoring of environmental safeguards measures also requires strengthening. It is important to note that REMA has been only recently (early 2009) reorganized in conjunction with the establishment of the Rwanda Development Board (RDB) which took over the EA function (and human and technical resources) from REMA. A TFESSD-financed study commissioned for the Project on institutional environmental capacity at MINAGRI, and potential implications of this institutional arrangement at REMA, has recently been concluded. In charting a way forward, this environmental institutional capacity assessment has provided recommendations to strengthen institutional capacity at the local and national levels related to implementation of EMPs. It is hoped that this assessment will complement the site specific EMPs as an instrument to strengthen long-term institutional and organizational capacity of relevant agencies – REMA, RDB and MINAGRI while identifying ways to strengthen capacity of local government level officers and extension workers to address environmental risks pertinent to LWH activities. Recommendations have been made in two areas: (i) to fill institutional gaps that will facilitate effective implementation of site specific EMPs; and, (ii) to strengthen the institutional capacity as part of the Project's institutional strengthening component. These recommendations have been made in the context of a very recent re-organization of decentralized environmental management away from multi-tasking District Environmental Officers, towards the appointment of sector-level environmental officers. The assessment also identified for the Project the specific capacity needs of decentralized environmental officers,⁵⁵ resulting in the costing of environmental capacity support activities under sub-component A4 and the assignation of a strong Environmental Officer at the LWH/Program 1 Implementation Team of MINAGRI.

20. Borrower capacity for social safeguards implementation is constrained, as limited technical capacity and understanding exist to implement the project consistently with the Bank

⁵⁵ The full report will be available as part of the Project documents file.

resettlement policy. Close technical support is being provided by the Bank social specialist during preparation and implementation to ensure compliance with not only domestic but also international good resettlement practice. In addition, MINAGRI is gaining first-hand experience with social safeguards implementation through an ongoing Bank operation (RSSP 2) and these activities were rated Satisfactory in a recent implementation support mission. MINAGRI will hire a rural sociologist and other strengthening measures will be outlined in the project safeguards documents and integrated in the project budget, implementation and monitoring plan.

Safeguards Supervision Plan

21. Given the Borrower's limited (but growing) experience with implementation of environmental and social safeguards instruments, close safeguards supervision and implementation support will be carried out during the early stage of project implementation until adequate safeguards experience is developed. MINAGRI technical staff in cooperation with REMA/RDB, sector-level Environmental Officers and other relevant local government staff will supervise the implementation of the safeguards instruments discussed above. The IDA supervision will focus on (i) providing regular implementation support and (ii) carrying out field reviews of safeguards implementation, and (iii) monitoring safeguards implementation based on periodic progress reports. IDA supervision will be carried out by field-based Bank technical staff and complemented by specialist consultants together with MINAGRI and REMA/RDB technical staff not only during regular biannual supervision missions but also during interim technical safeguards missions that will respond to emerging issues or MINAGRI requests for assistance. Monitoring will include regular water quality testing, incidence of water borne diseases, and other parameters (based on EIA and RPF recommendations).

Safeguards in the Legal Documents

22. Borrower commitment to implement the provisions of the safeguards instruments (EA, EMPs, PMP, ESMF, Dam Safety Plans and RPF) have been included as specific covenants in the project legal documents.

Indigenous Peoples

23. Careful consideration was made to the application of OP 4.10 for this project with regard to communities that have been historically marginalized due to cultural and political reasons, including the Batwa ethnic group, who in the past had distinct livelihoods.⁵⁶ It is estimated by the Government of Rwanda that 25-30,000 of these historically marginalized people live in Rwanda at present. A socio-economic survey undertaken in 2004 notes that the historically marginalized people live in small groups dispersed throughout the country and earn their livelihoods as potters, laborers and porters. Further, the survey notes that these people do not participate in traditional community life distinct to the group, although they would be considered vulnerable.

⁵⁶ According to GoR, marginalized people and communities in Rwanda refer to people and communities that have been marginalized in the past due to: i) their cultural identity and practices (Akagera and ex-Umutara) or ii) isolated geographic location (islands of Nkombo and Mazane, forests) or iii) due to political reasons. The Batwa community has in fact been affected by all three of the above and they are sometimes referred to in different reports as Indigenous Peoples, even though this is not the position of GoR.

The survey also concludes that only about 14 percent of these people which is about 920 households live in rural areas,⁵⁷ where the LWH project will necessarily operate (as an agricultural project).

OP4.10 screening for LWH

24. Notwithstanding the small number of rural historically marginalized households in Rwanda, the small likelihood that these would be found in groups, and the even smaller likelihood that if there were such groups, they would be living a traditional lifestyle, several layers of screening were undertaken during Project preparation in areas likely to be served by the Project. The screenings to place to provide for field verification of an emerging conclusion that historically marginalized persons/communities would not be affected by the Project. In determining whether OP 4.10 applies to the LWH Project, the following screening activities were undertaken:

- (i) Mayors, other local leaders and community members were consulted in seven communities of Kayonza, Bugesera, Karongi and Gatsibo districts. These districts are included in the proposed Rwanda LWH Project and are notable rural growth centers (that may also be considered for rural electricity connections under the Rwanda Electricity Access Scale Up project). Discussions with both men and women provided no evidence of distinct historically marginalized groups or individuals in the visited localities. The screening was undertaken as a pulse taking and a modest effort in light of OP 4.10, given the low chances of expected impact on the historically marginalized people (see footnote 57);
- (ii) Further to this modest effort, the socio-economic studies undertaken for the sites being considered for the Project did not yield information on historically marginalized persons/communities with distinct livelihoods that might be affected by the project.⁵⁸ Instead, the studies showed a great deal of conformity (e.g. 81 percent had basic education 100 percent own residences made out of earth walls and iron sheets roofing, while historically marginalized persons/communities in this country are known to have no education and temporary shelters made of sticks and grass, etc.). These observations were meant as indicative only to help with the preliminary identification of any historically marginalized persons/communities.
- (iii) Further to these indications, the Strategic Social Assessment commissioned during Project preparation undertakes to identify any historically marginalized and vulnerable groups (see footnote 16) by conducting a self-identification survey in potential Project-affected areas. (This activity was prepared in order to better plan for the participation of vulnerable groups in the proposed LWH project, including historically marginalized groups, returning and returned refugees, persons affected by HIV/Aids, orphans, widows /widowers and the elderly). This activity, with respect to

⁵⁷ Amédée KAMOTA, 2004, *"Enquête Sur les Conditions de vie Socio-économique des menages Bénéficiaires de la communauté des autochtones Rwandais"* The safeguard review team has determined that this survey remains relevant today in that conditions are unlikely to have changed in any significant manner in the last 5 years.

⁵⁸ MINIAGRI, 2008. Detailed Survey and Design Study –Socioeconomic studies, LWH project

OP4.10, extended the screening beyond that which was done (i) in the seven communities and followed up with (ii) the socio economic studies.

- (iv) Finally, the Project used the Strategic Social Assessment preliminary identification of historically marginalized persons/communities to follow up with a site-by-site screening by Social Development and Safeguards Specialist during Appraisal to determine whether these are Indigenous People, as defined by OP4.10.

25. During the appraisal mission (September 1-15, 2009), this fourth round of screening by the Team's Social Development Specialist confirmed the absence of any Indigenous Peoples as defined by the World Bank Policy 4.10, by visiting households that had been identified as historically marginalized. These visits confirmed at five specific LWH sites level, that there is a great extent of integration of all groups of people since 2003 into villages (*imidugudus*) and, therefore, there were no groups identifying themselves or recognized as a distinct cultural group, or have collective attachment to distinct habitats or ancestral territories. All people have taken on farming and some in addition have taken on pottery, and own the plots of land where their houses are situated. All children attend school and they speak the same language - Kinyarwanda. Therefore, it has been concluded that there are no Indigenous Peoples in the project area, as defined in the Bank Policy OP 4.10. However, other marginalized groups, such as people affected by HIV/AIDs, widows, the elderly, etc., were found and these will be provided for in the RPF and other Project activities.

26. Based on the above analysis, it was concluded that OP 4.10 does not apply to the proposed LWH project.

27. In all cases, should vulnerable people that may be relevant to OP 4.10 be unexpectedly noted through the preparation of Project activities, and require the application of OP 4.10, an Indigenous Peoples Plan will be prepared in accordance with the policy.

28. In general, Project impact on any vulnerable household includes the provision of targeted assistance to those who would like to improve their livelihoods through land use management measures for increased productivity and commercialization of hillside agriculture. Negative impacts, if any, would be related to both permanent and temporary land acquisition associated with land husbandry measures for hillside agriculture in selected sites (e.g. establishment of reservoirs, development of primary and secondary water distributions, and construction and maintenance of terraces). These issues have been addressed in the Resettlement Policy Framework (RPF) that will be disclosed in accordance with OP 4.12. The RPF provides for impact on all groups of vulnerable and marginalized men and women, including returning and returned refugees, people affected by HIV/Aids, orphans and the elderly.

Annex 11: Project Preparation and Supervision
RWANDA: Land Husbandry, Water Harvesting and Hillside Irrigation Project

Milestones for Land Husbandry, Water Harvesting and Hillside Irrigation Project

Key Step	Planned	Actual
PCN Review	12/18/08	12/18/08
Initial PID to PIC	01/23/09	01/29/09
Initial ISDS to PIC	01/23/09	01/29/09
Quality Enhancement Review	03/10/09	03/10/09
Decision Meeting	08/05/09	08/18/09
Appraisal	09/01/09	09/01/09
Negotiation	10/12/09	11/16/09
Board approval	12/15/09	12/21/09
Date of Effectiveness	05/01/10	
Planned Date of the Mid-term Review	05/01/12	
Planned Closing Date	06/30/14	

Key Institutions Responsible for Preparation of the Project: MINAGRI

World Bank Staff and Consultants Working on the Project

Name	Title	Unit
Loraine Ronchi	Sr. Economist (TTL)	AFTAR
Christine Cornelius	Program Coordinator	AFTAR
Alassane Sow	Lead Operations Officer	AFTAR
IJsbrand de Jong	Sr. Irrigation Specialist	AFTWR
Valens Mwumvaneza	Agricultural & Rural Dev Specialist	AFTAR
Wendao Cao	Rural Development Specialist	EASCS
Catherine Ragasa	Economist	ARD
Christophe Ravry	Sr. Agribusiness Specialist	AFTAR
Renate Kloeppinger-Todd	Rural Finance Adviser	ARD

Ann Rennie	Lead Financial Specialist	AFTFP
Michael Marx	Rural Finance Specialist	FAO
Martin Fodor	Senior Environmental Specialist	AFTEN
Mary C.K. Bitekerezozo	Senior Social Specialist	AFTCS
Diego Garrido Martin	Monitoring & Evaluation Specialist	AFTRL
Johannes Widmann	Country Officer	AFCKE
Chantal Kajangwe	Procurement Analyst	AFTPC
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Mohammed Taqi Sharif	Consultant/Institutional Specialist	AFTAR
Sameena Dost	Senior Counsel	LEGAF
Aissatou Diallo	Finance Officer	CTRFC
Yasmine Umutoni	Team Assistant	AFCRW
Patrice Sade	Team Assistant	AFTAR
Marie-Claudine Fundi	Language Program Assistant	AFTAR

Estimated Approval and Supervision Costs:

1. Costs to Approval: **USD 60,000**
2. Estimated Annual Supervision Costs: **USD100, 000**

Annex 12: Documents in the Project File
RWANDA: Land Husbandry, Water Harvesting and Hillside Irrigation Project

A. Bank Documents

1. Project Concept Note
2. Project Information Document (Appraisal Stage)
3. Integrated Safeguard Data Sheet (Appraisal Stage)
4. Minutes of the Project Concept Note Review Meeting
5. Technical Mission Aide Memoire
6. Project Appraisal Document (Draft)
7. Safeguard Mission Aide Memoire
8. Project Preparation Facility Agreement

B. Safeguards-Related Documents

1. Environmental Assessment (TOR and Disclosed Draft)
2. Environmental and Social Management Framework (TOR and Disclosed Drafts)
3. Pest Management Plan (TOR and Disclosed Draft)
4. Resettlement Policy Framework (TOR and Disclosed Draft)

C. Reference Documents

1. Economic Development and Poverty Reduction Strategy (EDPRS)
2. World Bank. 2007. *Promoting Pro-Poor Agricultural Growth in Rwanda: Challenges and Opportunities*. Agricultural Policy Note, (IBRD: Washington DC).
3. *Enquête Intégrale sur les Conditions de Vie des Ménages au Rwanda* (EICV), 2005-06.
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8. MIFOTRA. 2009. *National Skills Audit*.
9. FinScope. 2008. *FinScope Rwanda Data Book*
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14. Vagen, T.-G., Lal, R. and B.R. Singh .2005. "Soil Carbon Sequestration in Sub-Saharan Africa: A Review". In: *Land Degradation and Development* 16, 53-71
15. LWH Extension Assessment and Strategy
16. LWH Institutional Diagnosis of Farmer Organizations and Capacity Strengthening Strategy;
17. LWH Strategic Social Assessment of Community Mobilization, Communication and Gender;
18. LWH Assessment on the Legal Framework concerning Rural Financial Products;
19. LWH EFA Methodological Paper for Incorporating Social and Environmental Externalities (BB)
20. Financial Access in Rwanda, FinScope (DFID-financed)
21. LWH Horticultural Markets and Marketing Study (EU/All ACP Trust Fund for Horticultural Development)
22. Institutional Diagnosis for Environmental Management (TFESSD)
23. MINAGRI - Guidelines for Managing Small Dams in Rwanda (Draft - November 6, 2009)

Annex 13: LWH Program: A Common Framework for Engagement
RWANDA: Land Husbandry, Water Harvesting and Hillside Irrigation Project

COMMON FRAMEWORK OF ENGAGEMENT

DRAFT OUTLINE⁵⁹

Introduction

1. LWH Program Objectives

2. LWH Basic Components Description

Annexes

Annex 1	LWH Program Results Framework: Common Objectives, Outcomes and Indicators
Annex 2	Common Site Selection Criteria
Annex 3	Common Crop Selection Criteria
Annex 4	Technical Guidelines Part 1: TOR for site feasibility studies and for works
Annex 5	Technical Guidelines Part 2: Safety Guidelines and Quality Assurance Indicators
Annex 6	Common Environmental Guidelines
Annex 7	Common Guidelines for Social Engagement
Annex 8	Common Resettlement Policy
Annex 9	Common Farmer Training Manuals for Land Husbandry
Annex 10	LWH Program Group TOR
Annex 11	Economic and Financial Analysis Methodological Guidelines

⁵⁹ The full CFE is a work-in-progress, to be informed and finalized with the experience of Government through the Bank-financed LWH Project. To date, common selection criteria, EFA methodology, common environmental guidelines, resettlement policy and dam safety guidelines have been adopted and developed with the Bank, and used in Project preparation.

Annex 14: Letter of Sector Policy
RWANDA: Land Husbandry, Water Harvesting and Hillside Irrigation Project

REPUBLIC OF RWANDA

Kigali, 20 OCT 2009
No. 6093109/AC/EN



MINISTRY OF FINANCE AND
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Mr. Johannes C. M. Zutt,
Country Director for Rwanda,
Africa Region,
The World Bank
KENYA

Dear Mr. Johannes,

Re: Sector Policy letter for Land Husbandry, Water harvesting and Hillside Irrigation (LWH)

Agriculture is the backbone of Rwanda's economy, accounting for about 39 percent of GDP, 80 percent of employment, and 63 percent of foreign exchange earnings. It also provides 90 percent of the country's food needs. Key constraints to agricultural growth in Rwanda include: a binding land constraint which rules out intensification (bringing more and more land under use); heavy erosion and poor water management; low use of improved inputs; the need for greater (public and private) capacity from the district to the national levels; and limited commercial orientation constrained by poor access to output and financial markets.

Rwanda's long term strategy, Vision 2020 aims at modernizing agriculture from subsistence to market-oriented modern agriculture with impact to other economic activities. Developing a productive and market oriented agriculture is the 5th pillar of the Vision 2020 and environmental protection is among the four cross cutting areas of the Vision 2020. It also aims at using modern farming methods for at least 50% of the arable land, and reducing the agriculture work force from 90 to 50% by the year 2020. The vision 2020 focuses on (i) intensification and new marketable speculations including horticulture, (ii) better water use, irrigation and swamp reclamation and (iii) animal and plant genetic improvement as well as the adoption of the financial system in relation to the modernization of agriculture and livestock industry as key areas where the country can take a competitive advantage.

Website : <http://www.minecofin.gov.rw>

EDPRS, the Government of Rwanda's medium-term strategy for economic growth and poverty reduction aims at attainment of the long-term Rwanda Vision 2020 objectives. In agriculture, the main programmes include the intensification of sustainable production systems in crop cultivation and animal husbandry; building the technical and organizational capacity of farmers; promoting commodity chains and agribusiness, and strengthening the institutional framework of the sector at central and local level.

The *SPAT (Strategic Plan for Agriculture Transformation in Rwanda -Phase II* covers the four year period 2009-2012. The specific objective for the Strategy is to: *"Increase output of all types of agricultural products with emphasis on export products, which have high potential and create large amounts of rural employment; this under sustainable modes of production"*.

This Strategy develops agendas for action under the aegis of the following four interrelated Programmes:

- 1) Intensification and development of sustainable production systems.
- 2) Support to the professionalization of the producers.
- 3) Promotion of commodity chains and agribusiness development.
- 4) Institutional development.

The Government of the Republic of Rwanda is engaged in modernizing agriculture to reach an overall goal of food and nutrition security. One such program under the SPAT is the development of farmer-owned hillside irrigation, supported by a comprehensive land-husbandry program. In this view the Government of Rwanda has elaborated the *Land Husbandry Water Harvesting and Hillside Irrigation Program (LWH)*, to be implemented in 101 sites across the country. The program is expected to be financed by different partners, including World Bank and Government of Rwanda. The Bank-financed LWH project will finance a first slice of the Government's overall LWH Programme. Therefore, LWH is seen as a key component in the policy and strategic direction of the agriculture sector, and supports key elements in the Vision 2020, EDPRS, as well as the SPAT.

Please accept my sincere appreciation for all the support the World Bank is providing us in the different priority areas.

Please accept the assurances of my highest consideration.


James MUSONI

Minister of Finance and Economic Planning



Website : <http://www.minecofin.gov.rw>

- 2 -

Annex 15: Statement of Loans and Credits
RWANDA: Land Husbandry, Water Harvesting and Hillside Irrigation Project

Project ID	FY	Purpose	Original Amount in US\$ Millions				Cancel.	Undisb.	Difference between expected and actual disbursements	
			IBRD	IDA	SF	GEF			Orig.	Frm. Rev'd
P105176	2008	RW-Rural Sector Supt APL2 (FY08)	0.00	35.00	0.00	0.00	0.00	28.47	1.93	0.00
P079414	2008	RW-Transport Sector Development Project	0.00	11.00	0.00	0.00	0.00	9.29	-1.50	0.00
P098926	2007	RW-eRwanda TAL (FY07)	0.00	10.00	0.00	0.00	0.00	7.97	5.14	0.00
P060005	2006	RW-Urb Infrastr & City Mgmt APL (FY06)	0.00	20.00	0.00	0.00	0.00	3.15	-0.54	0.00
P066386	2005	RW-Pub Sec CB TAL (FY05)	0.00	20.00	0.00	0.00	0.00	12.05	11.43	0.00
P090194	2005	RW-Urgent Electricity Rehab SIL (FY05)	0.00	25.00	0.00	0.00	0.00	3.13	-4.30	0.00
P074102	2004	RW-Decentr & Community Dev Prj (FY04)	0.00	20.00	0.00	0.00	0.00	4.21	0.54	0.29
P065788	2001	RW-Regional Trade Fac. Proj. - Rwanda	0.00	7.50	0.00	0.00	0.00	3.45	1.96	0.00
P057295	2001	RW-Compet & Enterprise Dev (FY01)	0.00	46.80	0.00	0.00	0.12	6.77	-4.76	-2.42
P045091	2000	RW-Human Res Dev (FY00)	0.00	35.00	0.00	0.00	1.56	2.92	1.76	1.76
Total:			0.00	230.30	0.00	0.00	1.68	81.41	11.66	- 0.37

RWANDA
STATEMENT OF IFC's
Held and Disbursed Portfolio
In Millions of US Dollars

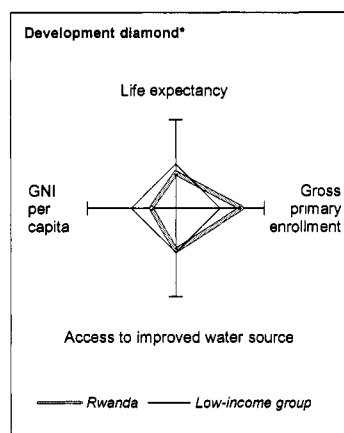
FY Approval	Company	Committed				Disbursed			
		IFC				IFC			
		Loan	Equity	Quasi	Partic.	Loan	Equity	Quasi	Partic.
Total portfolio:		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

FY Approval	Company	Approvals Pending Commitment			
		Loan	Equity	Quasi	Partic.

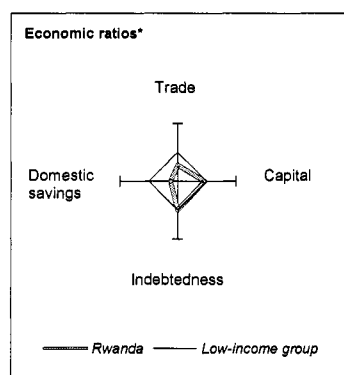
Annex 16: Country at a Glance

RWANDA: Land Husbandry, Water Harvesting and Hillside Irrigation Project

POVERTY and SOCIAL	Rwanda	Sub-Saharan Africa	Low-income
2007			
Population, mid-year (millions)	9.7	800	1,296
GNI per capita (Atlas method, US\$)	320	952	578
GNI (Atlas method, US\$ billions)	3.1	762	749
Average annual growth, 2001-07			
Population (%)	2.2	2.5	2.2
Labor force (%)	2.8	2.6	2.7
Most recent estimate (latest year available, 2001-07)			
Poverty (% of population below national poverty line)	..	..	..
Urban population (% of total population)	18	36	32
Life expectancy at birth (years)	46	51	57
Infant mortality (per 1,000 live births)	98	94	85
Child malnutrition (% of children under 5)	18	27	29
Access to an improved water source (% of population)	65	58	68
Literacy (% of population age 15+)	..	59	61
Gross primary enrollment (% of school-age population)	140	94	94
Male	137	99	100
Female	142	88	89

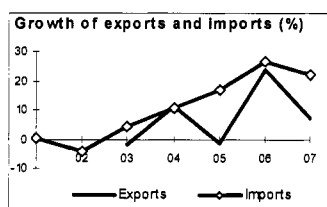
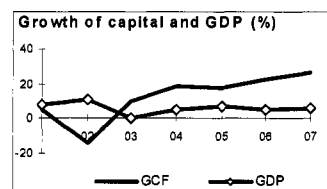


KEY ECONOMIC RATIOS and LONG-TERM TRENDS	1987	1997	2006	2007
GDP (US\$ billions)	2.2	1.9	2.9	3.3
Gross capital formation/GDP	15.7	13.8	20.3	22.5
Exports of goods and services/GDP	7.5	7.8	10.3	9.4
Gross domestic savings/GDP	4.0	-4.1	3.2	4.2
Gross national savings/GDP	9.2	4.3	13.8	17.6
Current account balance/GDP	-6.5	-9.4	-6.7	-4.8
Interest payments/GDP	0.3	0.4	0.3	..
Total debt/GDP	27.8	60.0	14.6	..
Total debt service/exports	13.4	14.5	10.6	..
Present value of debt/GDP	..	..	5.6	..
Present value of debt/exports	..	..	55.3	..
(average annual growth)	1987-97	1997-07	2006	2007
GDP	-4.7	6.7	5.4	6.0
GDP per capita	-2.5	2.7	2.9	3.0
Exports of goods and services	-12.1	14.4	23.6	7.0



STRUCTURE of the ECONOMY

(% of GDP)	1987	1997	2006	2007
Agriculture	37.7	46.0	41.3	35.6
Industry	17.8	16.6	13.3	14.1
Manufacturing	10.8	12.0	6.0	6.4
Services	44.5	35.4	45.4	..
Household final consumption expenditure	82.5	94.5	85.1	84.9
General gov't final consumption expenditure	13.5	9.6	11.7	10.9
Imports of goods and services	19.1	25.7	27.4	27.7
(average annual growth)	1987-97	1997-07	2006	2007
Agriculture	-18	5.6	11.0	-2.9
Industry	-9.7	7.4	8.2	13.4
Manufacturing	-10.5	5.1	13.1	9.8
Services	-4.9	7.4	-0.8	12.0
Household final consumption expenditure	-0.7	5.4	5.4	7.1
General gov't final consumption expenditure	-10	5.1	2.8	-15
Gross capital formation	-9.8	6.9	22.3	26.2
Imports of goods and services	6.7	4.5	26.8	21.8



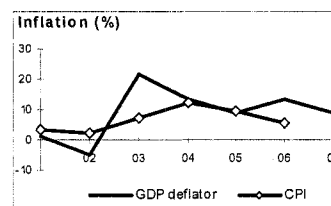
Note: 2007 data are preliminary estimates.

This table was produced from the Development Economics LDB database.

* The diamonds show four key indicators in the country (in bold) compared with its income-group average. If data are missing, the diamond will be incomplete.

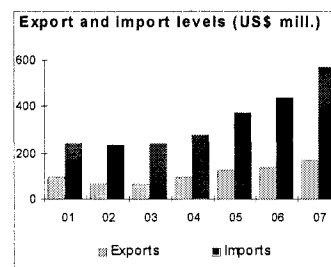
PRICES and GOVERNMENT FINANCE

	1987	1997	20062	007
Domestic prices (% change)				
Consumer prices	4.1	117	5.5	..
Implicit GDP deflator	0.7	15.6	13.1	8.9
Government finance (% of GDP, includes current grants)				
Current revenue	..	17.2	23.8	24.8
Current budget balance	..	5.7	7.7	7.5
Overall surplus/deficit	..	-2.5	-0.4	-0.4



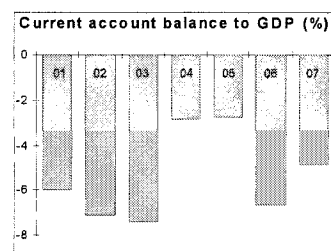
TRADE

	1987	1997	20062	007
(US\$ millions)				
Total exports (fob)	114	93	142	170
Coffee	92	45	54	34
Tea	8	21	32	32
Manufactures	2	18	42	71
Total imports (cif)	313	343	438	571
Food	24	54	..	..
Fuel and energy	52	37	..	..
Capital goods	96	62	..	..
Export price index (2000=100)	84	127	75	89
Import price index (2000=100)	84	97	120	133
Terms of trade (2000=100)	100	131	63	67



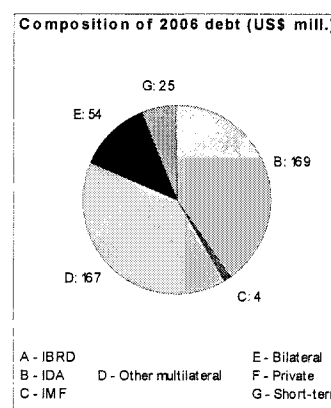
BALANCE of PAYMENTS

	1987	1997	20062	007
(US\$ millions)				
Exports of goods and services	160	144	269	306
Imports of goods and services	412	474	763	913
Resource balance	-252	-330	-494	-607
Net income	-14	-17	-19	-14
Net current transfers	126	172	322	460
Current account balance	-140	-175	-191	-161
Financing items (net)	5	204	273	276
Changes in net reserves	135	-29	-83	-115
Memo:				
Reserves including gold (US\$ millions)	..	..	440	559
Conversion rate (DEC, local/US\$)	79.7	3015	5517	550.1



EXTERNAL DEBT and RESOURCE FLOWS

	1987	1997	20062	007
(US\$ millions)				
Total debt outstanding and disbursed	598	1,111	419	..
IBRD	0	0	0	0
IDA	251	558	169	204
Total debt service	23	22	31	..
IBRD	0	0	0	0
IDA	3	10	13	2
Composition of net resource flows				
Official grants	70	124	1,484	..
Official creditors	92	62	46	..
Private creditors	-3	0	0	..
Foreign direct investment (net inflows)	18	3	11	..
Portfolio equity (net inflows)	0	0	0	..
World Bank program				
Commitments	38	50	0	0
Disbursements	39	53	37	28
Principal repayments	1	5	8	0
Net flows	39	48	29	28
Interest payments	2	4	5	2
Net transfers	37	43	24	26



Note: This table was produced from the Development Economics LDB database.

9/24/08

RWANDA

- SELECTED CITIES AND TOWNS
- ⊙ AKARERE (DISTRICT) CAPITALS
- ◉ INTARA (PROVINCE) CAPITALS
- ⊛ NATIONAL CAPITAL
- RIVERS
- MAIN ROADS
- - - AKARERE (DISTRICT) BOUNDARIES
- INTARA (PROVINCE) BOUNDARIES
- — INTERNATIONAL BOUNDARIES

