

Document of
The World Bank

FOR OFFICIAL USE ONLY

Report No: PAD 986

INTERNATIONAL DEVELOPMENT ASSOCIATION

PROJECT APPRAISAL DOCUMENT

ON A

PROPOSED CREDIT

IN THE AMOUNT OF SDR 106.4 MILLION
(US\$150 MILLION EQUIVALENT)

TO THE

REPUBLIC OF UGANDA

FOR AN

AGRICULTURE CLUSTER DEVELOPMENT PROJECT

March 16, 2015

Agriculture Global Practice (GFADR)
Country Department AFCE1
Africa Region

This document has a restricted distribution and may be used by recipients only in the performance of their official duties. Its contents may not otherwise be disclosed without World Bank authorization.

CURRENCY EQUIVALENTS
(Exchange Rate Effective January 31, 2015)
Currency Unit = UGX

UGX 2500 = US\$1
US\$1 = SDR 0.70932047

FISCAL YEAR
July 1 – June 30

ABBREVIATIONS AND ACRONYMS

ACB	Agricultural Chemicals Board
ACDP	Agriculture Cluster Development Project
ACCE	Area-based Commodity Cooperative Enterprise
AEZ	Agro-ecological Zone
AfD	<i>Agence Française de Développement</i> (French Development Agency)
AfDB	African Development Bank
ATAAS	Agricultural Technology and Agribusiness Advisory Services
AWP&B	Annual Work Plan and Budget
BoU	Bank of Uganda
B/C	Benefit/Cost
CAADP	Comprehensive Africa Agriculture Development Program
CAO	Chief Administrative Officer
CAS	Country Assistance Strategy
CASPR	Country Assistance Strategy Progress Report
CBO	Community-based Organization
CDO	Community Development Officer
CMP	Catchment Management Plan
CMSP	Cluster Multi-Stakeholder Platform
COMESA	Common Market for Eastern and Southern Africa
DAO	District Agricultural Officer
DCI&C	Department of Crop Inspection and Certification
DCP	Department of Crop Protection
DCP&M	Department of Crop Production and Marketing
DCR	Directorate of Crop Resources
DCT	District Coordination Team
DFD	Department of Farm Development
DP	Development Partner
DPC	District Production Coordinator
DPO	District Production Officer
DRC	Democratic Republic of Congo
DSIP	Development Strategy and Investment Plan
EAAPP	Eastern Africa Agricultural Productivity Project
EAC	East African Community
EIRR	Economic Internal Rate of Return
ESIA	Environmental and Social Impact Assessment
ESMF	Environmental and Social Management Framework
ESMP	Environmental and Social Management Plan

FAO	Food and Agriculture Organization (of the United Nations)
FMDC	Fertilizer Market Development Council
GAC	Governance and Anti-Corruption
GAFSF	Global Agriculture and Food Security Program
GDP	Gross Domestic Product
GoU	Government of Uganda
Ha	Hectare
ICB	International Competitive Bidding
ICR	Implementation Completion Report
ICT	Information and Communication Technology
IDA	International Development Association
IDB	Islamic Development Bank
IE	Implementing Entity
IFC	International Finance Corporation
IFMIS	Integrated Financial Management Information System
IFR	Interim Financial Report
IPSAS	International Public Sector Accounting Standards
IS	Implementation Support
ISTA	International Seed Testing Association
JICA	Japan International Cooperation Agency
KOICA	Korean International Cooperation Agency
LG	Local Government
MAAIF	Ministry of Agriculture, Animal Industry and Fisheries
M&E	Monitoring and Evaluation
MDAs	Ministries, Departments and Agencies
MDG	Millennium Development Goal
MoFPED	Ministry of Finance, Planning and Economic Development
MoGLS	Ministry of Gender, Labour and Social Development
MoLG	Ministry of Local Government
MoU	Memorandum of Understanding
MoWT	Ministry of Works and Transport
MT	Metric Ton
MTIC	Ministry of Trade, Industry and Cooperatives
MTR	Mid-Term Review
MWE	Ministry of Water and Environment
NAADS	National Agricultural Advisory Services
NARO	National Agricultural Research Organization
NCB	National Competitive Bidding
NDP	National Development Plan
NEMA	National Environment Management Authority
NMSP	National Multi-Stakeholder Platform
NPSC	National Project Steering Committee
NSCS	National Seed Certification Service
O&M	Operation and Maintenance
OECD	Organization for Economic Cooperation and Development
OPV	Open Pollinated Varieties
ORAF	Operational Risk Assessment Framework
PAD	Project Appraisal Document
PCU	Project Coordination Unit
PDO	Project Development Objective

PFM	Public Financial Management
PIM	Project Implementation Manual
PMP	Pest Management Plan
PMP	Project Monitoring Plan
PPP	Public-Private Partnership
PQS	Phytosanitary and Quarantine Service
PS	Permanent Secretary
PSFU	Private Sector Foundation Uganda
R&D	Research and Development
RAP	Resettlement Action Plan
RPF	Resettlement Policy Framework
RPO	Rural Producer Organization
SCS	Scheme Cooperative Society
SLM	Sustainable Land Management
SMS	Subject Matter Specialist
TA	Technical Assistance
ToR	Terms of Reference
TTL	Task Team Leader
UBOS	Uganda Bureau of Statistics
UCA	Uganda Cooperative Alliance
UGX	Uganda Shilling
ULeP	Uganda Leasing Project
UNADA	Uganda National Agro-dealer Association
UNPS	Uganda National Panel Survey
USAID	United States Agency for International Development
USTA	Uganda Seed Trade Association
VMA	Voucher Management Agency
WFP	World Food Programme
WG	Working Group
WMDP	Water Resources Management and Development Project
WUA	Water Users' Association

Regional Vice President:	Makhtar Diop
Country Director:	Philippe Dongier
Senior Global Practice Director:	Juergen Voegele
Practice Manager:	Tijan M. Sallah
Task Team Leaders:	David Nielson (TTL)
	Joseph Oryokot (Co-TTL)

UGANDA
Agriculture Cluster Development Project

TABLE OF CONTENTS

	Page
I. STRATEGIC CONTEXT	0
A. Country Context.....	0
B. Sectoral and Institutional Context.....	0
C. Higher Level Objectives to which the Project Contributes	3
II. PROJECT DEVELOPMENT OBJECTIVES	5
A. PDO.....	5
B. Project Beneficiaries	6
C. PDO Level Results Indicators	6
III. PROJECT DESCRIPTION	7
A. Project Components	7
B. Project Financing	10
C. Lessons Learned and Reflected in the Project Design.....	11
IV. IMPLEMENTATION	14
A. Institutional and Implementation Arrangements	14
<i>Overall Coordination and Management</i>	14
B. Results Monitoring and Evaluation	16
C. Sustainability.....	17
V. KEY RISKS AND MITIGATION MEASURES	17
A. Risk Ratings Summary	17
B. Description.....	18
VI. APPRAISAL SUMMARY	20
A. Economic and Financial Analyses	20
B. Technical.....	22
C. Financial Management.....	23
D. Procurement	23

E. Social (including Safeguards)	24
F. Environment (including Safeguards)	26
G. Other Safeguards Policies Triggered	27
H. World Bank Grievance Redress	27
Annex 2: Detailed Project Description	39
Annex 3: Implementation Arrangements.....	58
Annex 4: Operational Risk Assessment Framework (ORAF)	98
Annex 5: Implementation Support Plan.....	105
Annex 6: Financial and Economic Analysis	108
Annex 7: ACDP Clusters	124
Annex 8: Selected Clusters and Districts for ACDP	126
Annex 9: Preliminary Ex-Ante Carbon Balance (Exact – FAO 2013)	129

PAD DATA SHEET

Uganda

Agriculture Cluster Development Project (P145037)

PROJECT APPRAISAL DOCUMENT

AFRICA

Report No.: PAD986

Basic Information					
Project ID	EA Category	Team Leaders:			
P145037	B - Partial Assessment	David J. Nielson (TTL) Joseph Oryokot (co-TTL)			
Lending Instrument	Fragile and/or Capacity Constraints []				
Investment Project Financing	Financial Intermediaries []				
	Series of Projects []				
Project Implementation Start Date	Project Implementation End Date				
09-April-2015	31-March-2022				
Expected Effectiveness Date	Expected Closing Date				
01-June-2015	31-March-2022				
Joint IFC					
No					
Practice Manager/Manager	Senior Global Practice Director	Country Director	Regional Vice President		
Tijan M. Sallah	Juergen Voegele	Philippe Dongier	Makhtar Diop		
Borrower: Ministry of Finance, Planning and Economic Development					
Responsible Agency: Ministry of Agriculture, Animal Industry and Fisheries					
Contact:	Vincent Rubarema	Title:	Permanent Secretary		
Telephone No.:	+256 414 32 0004	Email:	ps@agriculture.go.ug		
Project Financing Data (in US\$ Million)					
<input type="checkbox"/>	Loan	<input type="checkbox"/>	IDA Grant	<input type="checkbox"/>	Guarantee
<input checked="" type="checkbox"/>	Credit	<input type="checkbox"/>	Grant	<input type="checkbox"/>	Other
Total Project Cost:	248.00		Total Bank Financing:	150.00	
Beneficiaries:	98.00		Financing Gap:	0.00	

Financing Source	Amount
BORROWER/RECIPIENT	0.00
Beneficiaries	98.00
International Development Association (IDA)	150.00
Total	248.00

Expected Disbursements (in US\$ Million)

Fiscal Year	2016	2017	2018	2019	2020	2021				
Annual	10	30	40	40	20	10				
Cumulative	10	40	80	120	140	150				

Institutional Data

Practice Area / Cross Cutting Solution Area

Agriculture

Cross Cutting Areas

Climate Change

Fragile, Conflict & Violence

Gender

Jobs

Public Private Partnership

Sectors / Climate Change

Sector (Maximum 5 and total % must equal 100)

Major Sector	Sector	%	Adaptation Co-benefits %	Mitigation Co-benefits %
Agriculture, fishing, and forestry	Crops	50		
Agriculture, fishing, and forestry	Irrigation and drainage	5		
Industry and trade	Agro-industry, marketing, and trade	40		
Agriculture, fishing, and forestry	Agricultural extension and research	5		
Total		100		

I certify that there is no Adaptation and Mitigation Climate Change Co-benefits information applicable to this project.

Themes

Theme (Maximum 5 and total % must equal 100)

Major theme	Theme	%	
Trade and integration	Trade facilitation and market access	30	
Rural development	Rural policies and institutions	30	
Rural development	Rural services and infrastructure	30	
Rural development	Water resource management	10	
Total		100	
Proposed Development Objective(s)			
The development objective is to raise on-farm productivity, production, and marketable volumes of selected agricultural commodities in specified geographic clusters.			
Components			
Component Name	Cost (US\$ Millions)		
Component 1: Support for Intensification of On-Farm Production	85.00		
Component 2: Preparation for Agricultural Water Management Investment	5.00		
Component 3: Market Linkages, Post-harvest Handling, Storage, and Value Addition	45.00		
Component 4: Project Management, Policy, Regulatory, and ICT functions of MAAIF	15.00		
Compliance			
Policy			
Does the project depart from the CAS in content or in other significant respects?	Yes	<input type="checkbox"/>	No <input checked="" type="checkbox"/>
Does the project require any waivers of Bank policies?	Yes	<input type="checkbox"/>	No <input checked="" type="checkbox"/>
Have these been approved by Bank management?	Yes	<input type="checkbox"/>	No <input type="checkbox"/>
Is approval for any policy waiver sought from the Board?	Yes	<input type="checkbox"/>	No <input checked="" type="checkbox"/>
Does the project meet the Regional criteria for readiness for implementation?	Yes	<input checked="" type="checkbox"/>	No <input type="checkbox"/>
Safeguard Policies Triggered by the Project	Yes	No	
Environmental Assessment OP/BP 4.01	X		
Natural Habitats OP/BP 4.04	X		
Forests OP/BP 4.36		X	
Pest Management OP 4.09	X		
Physical Cultural Resources OP/BP 4.11	X		

Indigenous Peoples OP/BP 4.10			X
Involuntary Resettlement OP/BP 4.12		X	
Safety of Dams OP/BP 4.37			X
Projects on International Waterways OP/BP 7.50		X	
Projects in Disputed Areas OP/BP 7.60			X
Legal Covenants			
Name	Recurrent	Due Date	Frequency
Project Coordination Unit		Effectiveness	Once
Description of Covenant			
The Recipient, through MAAIF, has established and put into operation a functional Project Coordination Unit, in accordance with the provisions of Section I.A.1(b)(i) of Schedule 2 to the Financing Agreement.			
Name	Recurrent	Due Date	Frequency
Voucher Management Agency		Effectiveness	Once
Description of Covenant			
The Recipient, through MAAIF, has appointed the Voucher Management Agent, in accordance with the provisions of Section I.A.1(b)(ii) of Schedule 2 to the Financing Agreement.			
Name	Recurrent	Due Date	Frequency
Project Implementation Manual		Effectiveness	Once
Description of Covenant			
The Recipient, through MAAIF, has prepared and adopted the Project Implementation Manual, in accordance with the provisions of Section I.B.1 of Schedule 2 to the Financing Agreement.			
Name	Recurrent	Due Date	Frequency
Appoint and Maintain Voucher Management Agency		June 1, 2015	Once
Description of Covenant			
The Recipient, through MAAIF, shall appoint, in accordance with the provisions of Section III of Schedule 2 to the Financing Agreement, and thereafter maintain, during the initial three (3) years of Project implementation, a Voucher Management Agent (“VMA”).			
Name	Recurrent	Due Date	Frequency
Staffing of Project Coordination Unit		December 1, 2015	Once
Description of Covenant			

The Recipient, through MAAIF, shall not later than six (6) months after the Effective Date: (a) recruit a PCU accountant, in accordance with the provisions of Section III of Schedule 2 to the Financing Agreement; and (b) provide financial management Training for accounting and audit staff, under terms of reference acceptable to the Association.

Conditions

Source Of Fund	Name	Type
IDA	Category 4 Disbursement	Disbursement

Description of Condition

Notwithstanding the provisions of Part A of this Section, no withdrawal shall be made under Category (4), in respect of a Matching Grant to any Beneficiary, until the Beneficiary has concluded a Matching Grant Agreement for the Project period.

Team Composition

Bank Staff

Name	Title	Specialization	Unit
Mary C.K. Bitekerezo	Senior Social Development Specialist	Senior Social Development Specialist	GSURR
Jacob Burke	Lead Irrigation Specialist	Lead Irrigation Specialist	GWADR
Howard Bariira Centenary	Senior Procurement Specialist	Senior Procurement Specialist	GGODR
Grahame Dixie	Adviser	Adviser	GFADR
Moses K. Kibirige	Senior Private Sector Development Specialist	Senior Private Sector Development Specialist	GTCDR
Jeehye Kim	E T Consultant	Operations Officer	GFADR
Rosemary Birungi Kyabukooli	Program Assistant	Program Assistant	AFMUG
Carl Erik Schou Larsen	E T Consultant	Senior Agriculture Specialist	GFADR
Christine M. Makori	Senior Counsel	Senior Counsel	LEGAM
Pauline McPherson	Senior Operations Officer	Senior Operations Officer	GFADR
Edwin Nyamasege Moguche	Consultant	Financial Management Specialist	GGODR
Constance Nekessa-Ouma	Social Development Specialist	Social Development Specialist	GSURR
David J. Nielson	Lead Agriculture Services Specialist	Team Lead	GFADR
Joseph Oryokot	Senior Agricultural	Co-TTL	GFADR

	Specialist		
Herbert Oule	Environmental Specialist	Environmental Specialist	GENDR
Hawanty Page	Senior Program Assistant	Senior Program Assistant	GFADR
Augustine Sangson Langyintuo	Senior Operations Officer	IFC	GTCDR
Christiaan Johannes Nieuwoudt	Finance Officer	Finance Officer	WFALA
Non-Bank Staff			
Name	Title	City	
Frans Goossens	Agro-Economist	FAO/Investment Centre	
Hermann Pfeiffer	Senior Agricultural Specialist	FAO Investment Centre	
Brent Simpson	Senior Agricultural Officer	FAO Investment Centre	
Roble Sabrie Economist)	Economist	FAO Investment Centre	
Anne-Françoise Thierry	Results Framework Specialist (Consultant)	Toulouse, France	
Ken Nugent	ICT Systems Specialist (Consultant)	Denver, Colorado	
James Ssemwanga	Agribusiness Specialist (Consultant)	Kampala, Uganda	
Wendy Wiltshire	COSTAB/Operations Analyst (Consultant)	Port of Spain, Trinidad	
MAAIF Staff			
Name	Title		
Okaasai Opolot	Director Crop Resources	Kampala	
Locations			
Country	First Administrative Division	Location	Planned Actual Comments
Uganda			

I. STRATEGIC CONTEXT

A. Country Context

1. **Uganda has a record of prudent macroeconomic management and structural reform over the past two decades.** This has helped Uganda achieve an impressive record of economic growth over the past 15 years. In the past several years, however, economic growth has slowed. From 9.3 percent per year in the period from 2001 to 2008, growth fell to 6.6 percent per year from 2009 to 2011, and to 4.5 percent per year since then. The impact of this growth has been quite evident –although per capita income has been tempered somewhat by the very high rate of population growth. Uganda’s population is estimated to be 37 million (2014) and is growing at roughly 3.3 percent per year, one of the world’s highest rates. Uganda may reach at least two of the eight Millennium Development Goals (MDGs) by the end of 2015 — it is close to halving poverty and addressing gender inequality, and has made progress on other MDGs. The economy is widely anticipated to experience a significant boost in Gross Domestic Product (GDP) once recently discovered oil reserves begin to be sold (full-scale production is expected to begin in 2016 at the earliest).

2. **Uganda’s National Development Plan (NDP) (2010/11-2014/15) aims at creating employment and raising per capita income levels, among other objectives.** Its central theme is “*growth, employment and socio-economic transformation for prosperity.*” An overarching challenge is to improve governance and value for money in the use of public resources, thereby enhancing public service delivery and infrastructure investments. For the next few years, Uganda also aims to address infrastructure bottlenecks, increase agricultural productivity and value addition, reintegrate northern Uganda, manage urbanization, provide new opportunities to deal with a growing challenge of youth unemployment, and strengthen its human capital base, all to sustain high growth and transform the economy. **Agriculture is one of the NDP’s five priorities.** The NDP’s agriculture chapter is aligned with the Agriculture Sector Development Strategy and Investment Plan (DSIP) that is the basis of this proposed project.

B. Sectoral and Institutional Context

3. **Agriculture is the single largest economic sector in Uganda.** It employs 87 percent of women and 63 percent of men – virtually all working on smallholder farms. Although a major economic contributor, the sector’s productivity still lags far behind the rest of the economy. Despite occupying nearly three-quarters of the labor force, agriculture generates only 25 percent of national GDP. Men, women, and youth all play significant roles in crop production, rearing of animals, and fisheries, but women bear the biggest burden in production, accounting for 60-70 percent of production, about 90 percent of post-harvest handling and processing, and almost 100 percent of household food provision. Despite their significant contribution, women experience greater gender inequalities in terms of access to and control of production resources, sharing of benefits, and decision making.

4. **Uganda has great potential to contribute to regional food security.** Studies have shown that addressing gender inequalities in agriculture and raising agricultural productivity contribute significantly to poverty reduction and improve food and nutritional security, as well as contributing to economic growth and more equitably shared prosperity for the economy as a whole. This would be particularly true in Uganda if its export markets for agricultural produce were further developed. Agriculture accounts for just over half of Uganda's export earnings. Increased agricultural production combined with increased exports to markets in the East African Community (EAC) and the Common Market for Eastern and Southern Africa (COMESA) are quite feasible and represent a very compelling growth path for Uganda. Compared to other countries in the region, it is widely acknowledged that Uganda has a comparative advantage in producing staple food crops. While Uganda's scope for extending land under production is limited, through intensification Uganda could significantly contribute to regional food security by increasing exports to the COMESA market, currently the recipient of one-third of Uganda's total exports.¹

5. **Ugandan agriculture has grown at an annual rate of 2.9 percent since 2000.** At closer to 2.0 percent per year over the last five years, growth has lagged well behind overall annual growth in the economy (5.8 percent) and behind the annual population growth rate (3.3 percent) over the same period. It has also lagged behind the 6 percent per annum growth target for agriculture called for by the Comprehensive Africa Agriculture Development Program (CAADP) and Uganda's own NDP. This recent slow growth notwithstanding, Uganda is widely considered as one of the countries with the highest agricultural potential in East Africa, and there is a real opportunity for rapid growth in the sector.

6. **Uganda's agricultural productivity is relatively low in comparison to neighboring countries and is far below its own potential.** This is due to low input use, poor agricultural infrastructure, weak market linkages, and very low on-farm mechanization even when compared to other Sub-Saharan African countries. Uganda has hardly applied any of the green revolution technologies such as fertilizers, improved seed, mechanization, and irrigation. The country has the lowest utilization of inorganic fertilizers in Africa, at only 1.0 kg per hectare²; only 13 percent of the cropped area was planted with commercial or improved seeds in 2008/09, compared to 22 percent for Sub-Saharan Africa and 80 percent in Asia³; it has 2,500 tractors today compared to 4,200 tractors 30 years ago, and animal traction is used in only a few parts of the country. Despite abundant rainfall and vast rivers and lakes, farmers are unable to manage

¹ Uganda's exports in 2011 were US\$2.159 billion, out of which US\$1.324 billion went to COMESA. Agricultural exports represent 55 percent of total exports; Uganda's agricultural exports to COMESA are thus estimated at US\$727 million, at 34 percent of total exports.

² The African average is 8 kg/ha (2002) (Source: M. Morris et al. 2007. "Fertilizer Use in African Agriculture: Lessons learned and good practice guidelines." World Bank, Washington, DC). The African average is itself very low – average per hectare usage in other developing countries and regions of the world exceeds that of Africa by more than a factor of 10.

³ Sub-Saharan African and Asia figures are for the year 2000 (Source: World Bank. 2008. *World Development Report*. World Bank, Washington, DC).

and use available water resources for agriculture due to limited irrigation infrastructure and low levels of water management. However, Uganda already uses 80 percent of its arable land, and further expansion of agricultural production onto new lands will be very limited. While this is a constraint, significant scope remains for raising agricultural production. It is estimated that even without expansion onto currently unused lands, Uganda could more than double current agricultural production through the adoption of yield-enhancing and climate-resilient technologies that are already available.

7. **The EAC and COMESA markets offer opportunities for Ugandan farm exports.** If Uganda was able to increase production, improve the quality of shipments, lower the transactions costs of moving commodities to and across the border, and establish reliable linkages between Ugandan producers and prospective purchasers in the EAC and COMESA markets, Ugandan exports of agricultural commodities (particularly those supported under the proposed project) could be substantially expanded. In the case of maize, for example, Uganda services less than 20 percent of the agricultural market needs of Kenya and South Sudan. Maize imports for Kenya and Tanzania are valued at about US\$133 million per year, of which Uganda exported US\$26 million in 2011. The opportunities are substantial for Uganda to expand export revenues in these markets and, correspondingly, to increase farm-level incomes related to these five commodities. In the case of rice, demand from an increasingly urban population is also rising, particularly for higher-value varieties currently being imported, thereby presenting an opportunity for import substitution.

8. **The emergence of a petroleum sector provides both opportunities and risks for agriculture.** In the short term, the development of the oil industry has stimulated substantial employment and new demand for food commodities in the districts involved. Together with the more general impact of the emergence of the oil sector on GDP, these developments pose important opportunities for growth in demand for the outputs of the agriculture sector. However, the potential for “Dutch disease”-type worsening of the terms of trade for agriculture could also bring strong challenges to the sector. Under such conditions, the enhancements to productivity in the sector that ACDP can deliver will be doubly important.

9. **Uganda adopted an Agriculture Sector DSIP in 2010 and signed a CAADP compact in the same year.** These documents provided direction and the framework for action, to be complemented by more detailed implementation plans. To date, only two subprograms out of 22 have been operationalized through the Agricultural Technology and Agribusiness Advisory Services (ATAAS) Project, and this involves support to the National Agricultural Research Organization (NARO) and the National Agricultural Advisory Services (NAADS).

10. With the technical assistance (TA) of the World Bank, the Ministry of Agriculture, Animal Industry and Fisheries (MAAIF) completed a comprehensive plan to operationalize the Agriculture Sector DSIP in 2012, with the establishment of 12 Ministerial Task Teams and systematic consultative workshops involving more than 1,000 stakeholders. The resulting Action Plan was launched in November 2012 by the Vice President of the Republic of Uganda during the 2012 Joint Agriculture Sector Review meeting. These plans now form the basis for the proposed Agriculture Cluster Development Project (ACDP). Action Plans for DSIP operationalization form a good foundation for reaching the government’s priority of increasing national food security as well as agricultural exports to the EAC and COMESA markets. MAAIF and the Ministry of Finance, Planning and Economic Development (MoFPED) see this as a

strategic intervention for macroeconomic growth, enhanced balance of trade, employment creation, and increased household revenues for smallholder farmers.

C. Higher Level Objectives to which the Project Contributes

11. **The proposed project will provide farmers in selected clusters with improved agricultural infrastructure, improved access to purchased inputs, improved post-harvest handling, and more competitive prices for both inputs and outputs.** The project is included in the recent Country Assistance Strategy Progress Report (CASPR) which covers FY11 – FY15 and was discussed by the Board in FY13. As such, **the proposed project will contribute to achieving Country Assistance Strategy (CAS) outcome 1.3** (increased productivity and commercialization of agriculture) **and CAS outcome 1.4** (increased efficiency and sustainability of natural resource management through harnessing water for agricultural production and promoting practices for sustainable productivity). To this extent, it will contribute to the goal of moving Uganda towards more climate-smart agriculture.

12. **Demand for the selected crops (maize, rice, beans, cassava, and coffee) in national and regional markets is high.** However, Uganda’s market potential remains largely untapped because of a number of market failures and systemic risks. Ugandan smallholder farms are characterized by a very slow adoption rate of new technologies, a low rate of capital investments, weak market power of farmers and their cooperatives, high transactions costs for moving their products to market (whether domestic or abroad), undeveloped relationships with prospective buyers, and often low-grade products. The proposed project aims to address all of these constraints.

13. **The proposed project will be coordinated with another World Bank-supported operation** (the Global Agriculture and Food Security Program (GAFSP)-supported Uganda Multi-sectoral Food Security and Nutrition Project (P149286/US\$27 million) – recently approved). Together with ACDP, this GAFSP-funded project will focus on improving food and nutrition security for families in the same geographic clusters in which ACDP will be implemented. Further, the proposed project will complement the ongoing World Bank-financed ATAAS Project, which focuses on strengthening agricultural research and agricultural advisory services across the country.

14. **In 2014, the Government of Uganda (GoU) decided to restructure its approach to agricultural extension.** Prior to that decision, agricultural extension was implemented through NAADS – a semi-autonomous agency of MAAIF. The government decided to discontinue the agricultural extension program of NAADS and to establish a reconfigured agricultural extension program housed within MAAIF itself. This change was in part to unify extension into a single-spine system – i.e., to no longer have several publicly supported extension services operating simultaneously under different public agencies. It was also in part to separate agricultural extension from the delivery of agricultural inputs – activities that had been closely linked under NAADS in recent years. Extension under MAAIF will not be involved in input distribution, while the NAADS agency will continue with a new and different mandate that may include involvement in the distribution of inputs, among other things. The recent restructuring of ATAAS at its Mid-Term Review (MTR) (in October 2014) responded to these reforms by reallocating funds previously dedicated to support the agricultural extension program of

NAADS. The Bank, through the restructured ATAAS, will provide technical as well as financial support development of the new agricultural extension program for Uganda under MAAIF. Even with this support, its establishment will require some time to launch and roll out. Consequently, at least initially, ACDP will not be able to rely on the effective presence of a government-run agricultural extension system in all of the project areas. For this reason, measures will be taken under ACDP to compensate for the likely slowdown in extension that will accompany these changes in the short run, while putting in place measures to make extension more effective in the longer run.

15. **The International Finance Corporation (IFC) actively participated in the design of ACDP and will also participate in the supervision of project implementation – with particular focus on the policy and regulatory issues affecting agricultural value chains.** IFC will also monitor the development of agricultural input supply chains as well as the development of the marketing and distribution system for both domestic sales and exports of the commodities supported by ACDP – this to provide TA where needed, and also to identify possible areas for future investment in these value chains. The proposed project will complement IFC’s activities to strengthen the private sector and farmers’ organizations and cooperatives to provide the relevant services for enhanced commercialization of produce.

16. **Development of an Information and Communication Technology (ICT) system to improve MAAIF’s effectiveness in the management of its own functions will also be supported by the proposed project.** This will bring important opportunities to farmers and agribusinesses to improve productivity and profitability in their respective agricultural enterprises. In this respect, the project will serve as an innovative example for other African countries seeking to improve the effectiveness of their respective agricultural ministries using ICT. The project will build on Uganda’s relatively strong record in improving gender equity through deliberate inclusion and promotion of project activities with farms and agribusiness activities owned, operated, and managed by women. The project will aim to empower more women and youth to make decisions, invest in agriculture, and improve their social and economic status for the family’s overall wellbeing.

17. **The proposed project will complement a number of ongoing and planned efforts supported by other external development partners (DPs) to raise agricultural productivity and improve the effectiveness of agricultural markets.** Among these are the programs supported by the United States Agency for International Development (USAID), Islamic Development Bank (IDB), Japan International Cooperation Agency (JICA), Korean International Cooperation Agency (KOICA), *Agence Française de Développement* (Afd), and the Netherlands. Most of these programs focus on strengthening the private sector.

II. PROJECT DEVELOPMENT OBJECTIVES

A. PDO

18. The Project Development Objective (PDO) is to raise on-farm productivity, production, and marketable volumes of selected agricultural commodities in specified geographic clusters. Four of the five selected commodities (maize, beans, rice, and cassava) are major food crops chosen based on the priorities articulated in the operationalization framework⁴ for the non-ATAAS components of the DSIP. A fifth crop, coffee, was subsequently added.⁵ The specified clusters of districts were selected because they have particularly high potential for increased productivity in the five chosen commodities. These clusters and districts are listed in Annex 8.

19. **Successful implementation of the project will raise farm and agribusiness incomes while substantially lowering transaction costs in markets for agricultural commodities.** Special attention will be given to proactively ensure inclusion within project activities of farming households (and agribusiness firms) in which women and youth play a prominent role in the management of the farm (and/or agribusiness) enterprise. Training under ACDP will provide an opportunity for special attention to be given to intensification of farming operations in ways that are climate-smart – this will be built into and emphasized in training provided to participating farm households as well as to other value chain actors. The selected commodities are major food crops for which women and youth are often granted (within the family) access to land for production. The project will help women and youth become more effective in their participation in farming activities and help them have more transparent and equitable access to income received from the sale of these commodities. ACDP will have a gender target of no less than 40 percent men, 40 percent women, and 20 percent youth each in all its activities and commodity implementation.

20. **Participating farm households will benefit from greater efficiency, larger volumes of on-farm production, and more favorable prices for inputs as well as for marketed production.** In terms of the likely direct impact of ACDP, conservative estimates suggest that by reaching 450,000 farm households (approximately 25% of all farm households in the targeted districts) with such support, sales of inputs will experience an incremental increase of over US\$12 million in each cluster over the six years of ACDP. This will present significant opportunities to stockists and input distributors. It is further estimated that the increase in production spurred by the use of subsidized inputs (i.e., e-Vouchers) under the program will stimulate an incremental rise in farm output in project areas valued at US\$300 million over the life of the project. This will have a significant effect on farm incomes – an increase of over US\$650 per participating farm household over the period of its participation in the project. This

⁴ Proposed plan to operationalize the non-ATAAS components of the Agriculture Sector DSIP (MAAIF, November 2012).

⁵ The government's request to include coffee was predicated on coffee's important potential as a source for growth in the agriculture sector and for the economy more generally. Coffee features prominently in the country's NDP and in MAAIF's DSIP, and is one of the 12 strategic products prioritized for development in Uganda's National Export Strategy.

is enough to raise household income by 20 percent on average over that period (and these are mostly people with incomes under the poverty line). This figure is an underestimate of the overall impact of the program on on-farm incomes in that it takes into account only the value of a production gain, not factoring in the likely price, quality, and community benefits of this rise in production – and also not taking into account the likely scaling up of the intensification of production on each participating farm beyond the area supported by ACDP itself. Further, it is anticipated that over time the program will be expanded by the GoU to households and districts beyond the reach of ACDP, broadening the reach of the project’s economic benefits. Households participating in ACDP are anticipated to use at least part of the ACDP-generated increases in their incomes to raise the level of investment in inputs for each crop cycle on additional acres – and to continue to do this beyond the period of e-Voucher support from ACDP. This will further raise the project’s overall indirect impact.

21. **Through the agricultural water management component, the project will set the stage for irrigation investments that will benefit about 16,000 rice farmers situated in selected irrigation schemes.** The project will support about 30 Water Users' Associations (WUAs) in better water management and maintenance of their water facilities.

22. **Private agribusiness firms will benefit through greater volume and lower transaction costs.** The involvement of wholesale buyers, input dealers, rural banks, and commercial farmers will be crucial in establishing linkages to ensure effective access to productive assets, capital, services, technical know-how, and markets. These actors will have relatively large but mainly indirect benefits.

23. **More generally, the project will contribute to improved food security and better nutrition for rural and urban consumers.** Because the project will help to scale up climate-smart approaches to the intensification of farm production, this will have positive externalities for the Ugandan economy and society, as well as beyond the country’s borders.

B. Project Beneficiaries

24. **Core beneficiaries of the project will be farmers, especially smallholders, and other value chain actors at the local, district and national level.** These include farmers’ associations, cooperatives, and a variety of private sector actors. The project will work with approximately 300 Area-based Commodity Cooperative Enterprises (ACCEs) representing about 3,000 Rural Producer Organizations (RPOs). These RPOs represent about 450,000 farming households, of which 180,000 are producers of maize (50 percent of these also produce beans), 95,000 are producers of beans, 40,000 are producers of rainfed upland and rainfed lowland rice, 110,000 are producers of Robusta and Arabica coffee, and 25,000 are producers of cassava.

C. PDO Level Results Indicators

25. Progress towards the PDO will be measured by the following PDO-level results indicators: (a) increases in yields of selected commodities (maize, rice, beans, cassava, and coffee) for participating farms in the project areas (kg/ha); (b) percentage increases in production of the selected commodities by participating households; (c) percentage increases in production of the selected commodities in the project area; (d) percentage increases in marketed volumes of

maize, rice, beans, cassava, and coffee (in MT) sold through participating farmers' organizations in the project areas; increase of volumes of commodities marketed through produce organizations; and (e) increases in the proportion of direct project beneficiaries who are women.

III. PROJECT DESCRIPTION

26. **The proposed project will support activities that raise both productivity and production of maize, beans, cassava, rice, and coffee in 12 selected high-potential agricultural areas in Uganda termed “clusters”** (see next paragraph and Annexes 7 and 8 for explanation of the cluster concept). The proposed project will also support the following: (i) preparation of designs for rehabilitation and expansion of irrigation schemes for rice, and the development of a national strategic plan for irrigation and water management; (ii) activities to improve the marketing of agricultural commodities; (iii) investments in on-farm and community-level storage as well as in other post-harvest handling and processing equipment and infrastructure;⁶ (iv) MAAIF's capacity to develop, improve, and implement policies and regulatory frameworks for production and marketing of the five selected commodities; and (v) development and operation of an ICT-based Agricultural Information Platform within MAAIF.

27. **As noted above, the proposed project will concentrate on supporting production and marketing of the selected commodities in 12 geographic clusters.**⁷ A commodity cluster is an area covering on average three districts, with proven production potential for at least two of the selected commodities. The cluster approach provides opportunities for economies of scale in the delivery of support services and utilization of common marketing infrastructure, input/output bulking, and enhanced value addition (grading and processing of produce) all along value chains. The cluster approach will make it possible for actors from several districts to make collective decisions for issues that extend across the borders of their respective districts.

28. **The proposed project will adopt a phased approach,** starting in a small number of clusters with one or two commodities, and then building toward broader geographic coverage including all five selected commodities.

A. Project Components

29. The activities and investments to be supported under the proposed project are organized into four components. The components are summarized below and presented in more detail in Annex 2.

⁶ Investments in improved capacity for storage are essential for minimizing post-harvest loss and for making possible temporal management of sales at the farm level. Expansion in productivity and production needs to be matched with expansion in storage capacity. Storage capacity is needed at both the farm and community level. On-farm storage is thought to be an even more binding constraint at present than community-level storage. In ACDP, investment in on-farm storage will be supported through the e-Voucher scheme in Component 1, while investment in community-level storage capacity will be supported under Component 3.

⁷ See details in Annex 7.

30. **Component 1. Support for Intensification of On-Farm Production (US\$155 million of which IDA financing of US\$85 million).** The objective of Component 1 is to support the intensification of on-farm production of five priority commodities (maize, cassava, beans, rice, and coffee). These commodities will be provided to some 450,000 selected farm households located in 12 geographic areas/clusters chosen because of their high production potential for two or more of the five specified commodities. For participating farm households, support under this component of ACDP will take the form of: (1) a time-bound partial and diminishing matching grant (e-Voucher) to help finance the purchase of key inputs and on-farm storage⁸; and (2) targeted training in the most effective use of these inputs. ACDP will also provide support to MAAIF to strengthen its capacity to collect, analyze, and provide information on agricultural input markets, and to offer capacity-building services to input suppliers. Details of these activities are presented as subcomponents 1.1, 1.2, and 1.3 in Annex 2 of the PAD. **The e-Voucher and associated training program will be piloted (reaching some 30,000 farm households) during an initial “year 0.”** Year 0 will take place prior to the launch of ACDP with funding from the restructured ongoing ATAAS project. Lessons learned from the pilot phase will inform further rollout of the program – to cover all 450,000 recipient farm families by the end of year 3 of the program.

31. **Implementing the e-Voucher scheme and supporting the training for farmers will be challenging in the start-up and scale-up stage.** MAAIF will contract a Voucher Management Agency (VMA) to launch and implement these programs (subcomponents 1.1, 1.2, and 1.3). The VMA will be contracted through a competitive process – initially on a 3 year contract. The performance of the VMA will be evaluated at the Mid-Term Review of ACDP. Among the responsibilities of the VMA will be to develop the capacity of MAAIF to manage the voucher scheme. Software used by the VMA would also be handed over to MAAIF.

32. **Component 2: Preparation for Agricultural Water Management Investment (IDA financing of US\$5million).** The intensification of rice production under the cluster approach will involve adoption of irrigated rice varieties grown under sustainable wetland management. This approach is expected to raise cropping intensities and mitigate current patterns of land and water degradation in lowland areas that are being developed informally. The quantity and quality of lowland rice production is expected to improve as a result of input subsidies under the e-Voucher scheme and improved rice marketing under the project, but will need long-term commitment to the designing and preparation of lowland rice irrigation and associated watershed protection. Consequently, under this component, the project will support preparation of strategic plans for lowland rice irrigation scheme development within clusters where such developments are viable.

⁸ The instrument for providing a time-bound, partial, and diminishing matching grant for the purchase of key farm inputs is an e-Voucher. Eligible farm households will receive an e-Voucher that covers part of the expense involved in the purchase of a group of inputs (fertilizer, seed, on-farm storage, access to technical and market information through ICT tools including mobile phones). The support from the e-Voucher will be geared to help them to intensify production of one of the prioritized commodities on one acre of their farms and to improve post-harvest handling through investing in farm-level storage (reducing post-harvest loss and giving greater temporal flexibility in managing sales of surplus). Each farm household will choose the specific combination of inputs purchased with the e-Voucher from the menu of eligible inputs.

It will also offset and improve the impacts of current, informal lowland rice development. These strategic plans will include: (i) preparation of plans for irrigation and drainage investments for up to 6,400 ha of existing lowland rice fields; (ii) support for the formation and consolidation of WUAs within these areas; and (iii) support for the development of soil and water conservation plans for the selected areas to maintain ecosystem functions and nutritional diversity for impacted communities. This will include climate-smart flood regulation, sediment control, and drainage across the irrigated areas, and will contribute directly to climate change mitigation measures. It is expected that MAAIF will review priority lowlands in several clusters, undertake prefeasibility studies for selected schemes, and prepare detailed bidding documents for schemes that pass economic and environmental criteria. This preparation work will take three to four years. Financing of these priority schemes can then be considered subsequently, either related directly to ACDP or under parallel financing arrangements as and when the designs and costs are confirmed. Details of these activities are presented as subcomponents 2.1, 2.2, and 2.3 in Annex 2 of the PAD.

33. Component 3: Market Linkages, Post-harvest Handling, Storage and Value Addition (US\$78 million of which IDA financing of US\$45 million). Component 3 will provide TA and matching grants to farmers' associations to improve their capacity for marketing and post-harvest handling of farm produce. Under this component, the project will also finance infrastructure works to eliminate bottlenecks and trouble spots on rural access roads critical for the movement of farm produce to market. These activities will enable the increased production stimulated by the e-Voucher scheme in Component 1 to find profitable market opportunities.

34. Commissioned studies have demonstrated strong market prospects for rice internally, as well as for beans and maize for the internal institutional market as well as for target regional markets. The prospects for cassava are mainly for the dried chip product market. During the initial two years of the project, activities under this component will support improved market linkages, market access, and provision of market intelligence for farmers, producer organizations, and the trader network. This will include helping producer organizations link with the Uganda Commodity Exchange. Finally, support and TA will be provided to farm cooperatives and farmers' associations at local levels to strengthen their capacity to manage their business enterprises effectively, to scale up their operations, and to improve their profitability. This will include support to these cooperatives and associations for the development of clear and effective business plans. Beginning in year 3 of the project, this component will also provide matching grant support to qualifying farmers' cooperatives and associations for investments in community-level facilities for commodity storage, processing, and other post-harvest handling functions. Details of these activities are presented as subcomponents 3.1, 3.2, and 3.3 in Annex 2 of the PAD.

35. Component 4: Project Management, Policy, Regulatory, and ICT functions of MAAIF (IDA financing of US\$15 million). The aim of this component is to: (i) ensure project management and coordination; (ii) strengthen MAAIF's effectiveness in carrying out its role with respect to policy and regulations affecting agricultural input and output markets; and (iii) develop and implement an ICT-based *Agricultural Information Platform* to enable effective real-time coordination and management of information at every level (and to support the implementation of the e-Voucher program). The Agricultural Information Platform is intended to provide MAAIF with the ability to: capture data from ongoing programs and projects using

electronic devices connected to mobile networks; upload information from manually collected data; and geospatially aggregate the data from local, regional, or national levels including agricultural statistics. The platform will enable email, file sharing, and creation of dashboards and provide benefits to monitoring and evaluation (M&E) functions. The Agricultural Information Platform will also support the development and implementation of new ICT tools and information knowledge management assistance to MAAIF and TA to farmers to help them: (a) have better access to practical information, knowledge, and technical advice to improve farm management and farming practices; (b) provide feedback and information to their advisors and program officers; (c) find and establish marketing linkages with input suppliers and output purchasers; and (d) participate in the e-Voucher scheme. Details of activities are presented as subcomponents 4.1, 4.2, and 4.3 in Annex 2 of the PAD.

36. To this end, ACDP will: (i) support the establishment of a PCU to manage the project; support MAAIF's Directorate of Crop Resources (DCR) to strengthen policy and regulatory frameworks, including, *inter alia*: (a) updating the 2006 Seed Act and associated regulations to make them consistent with the EAC harmonization protocols; (b) developing plant variety protection laws and regulations to promote private investment in genetic improvement; and (c) developing plans for strengthening the inspectorate division of MAAIF to effectively implement the revised seed law and regulations.

B. Project Financing

37. **The total cost of the proposed project cost is US\$248 million, of which US\$150 million will be financed from IDA.** Beneficiaries will provide complementary funding for some project activities. Farm households receiving e-Vouchers under Component 1 will, in aggregate, contribute US\$70 million. Farmers' organizations receiving matching grants under Component 3 will contribute, in aggregate, US\$28 million. These figures are detailed in the cost tables (see Annex 2).

Table 1: Project cost and financing (US\$'000)

Component	IDA Financing (US\$ million)	Other Contributions (US\$ million)	Total Financing (US\$ million)	% IDA Financing
Component 1: Support for Intensification of On-Farm Production	85	70	155	55
Component 2: Preparation for Agricultural Water Management Investment	5	0	5	100
Component 3: Market Linkages, Post-harvest Handling, Storage, and Value-Addition	45	28	73	62
Component 4: Project Management, Policy, Regulatory, and ICT Functions of MAAIF	15	0	15	100
TOTAL	150	98	248	60

C. Lessons Learned and Reflected in the Project Design

38. **Project design draws heavily upon assessments** (implementation completion and results reports (ICRs), commissioned studies, CAADP-related analysis, etc.) of past experience in Uganda as well as upon experiences and lessons learned from similar programs in other countries. Among these are:

- a. The proposed project will implement a time-limited e-Voucher scheme as a matching grant to encourage expanded use of select purchased inputs (fertilizer and seed, on-farm storage, and access to relevant technical and market information) in the selected cluster areas. The scheme will also provide TA (extension) to ensure that farmers are able to make good decisions about the use of these inputs. Experience in Tanzania has shown that a program of time-limited vouchers for inputs can be effective in the short run at rapidly lifting production – and also encouraging further input purchase after the grants have finished. The e-Wallet and TAP programs in Nigeria have demonstrated the same thing – and have also shown how such schemes can significantly reduce corruption and manipulation associated with publicly supported input distributions schemes. Experiences in Kenya and Zambia have shown that e-vouchers offer greater control over farmer targeting and minimize corruption associated with input matching grant schemes. In particular, the design of the input voucher scheme for Uganda draws heavily upon the Nigerian experience, in particular. The most recent and comprehensive study of African input subsidies⁹ demonstrates that subsidies provide a quick

⁹ Source: TS Jayne and Shahidur Rashid. August 2013. “Input matching grant programs in Sub-Saharan Africa: a synthesis of recent evidence.” *Agricultural Economics*.

yield response and are visible and powerful political tools. Further, such programs encourage the development of private sector distribution networks (rather than replacing them or crowding them out – an unintended consequence of many other types of schemes to expand input use). This intervention, then, is fully consistent with oft-referenced Overseas Development Institute (ODI) recommendation that the input supply schemes should “lead to improved access and productive use of inputs and build a sustainable small holders demand for inputs as well as private sector input supply.”¹⁰

- b. Current patterns of lowland rice development are not sustainable. Soil and water resources are quickly exhausted by intensive but unplanned rice cultivation. The adoption of water control combined with soil and water conservation measures could reverse this pattern of lowland degradation and provide a platform for sustainable intensification. Four public schemes (Agoro, Doho, Mobuku, and Olweny) have recently been rehabilitated and private sector initiatives in irrigated rice are expanding (TILDA rice and Eastern Rice Company Ltd., Pearl Rice Ltd). Public finance is now taking on the infrastructure risk with a set of lowland rice irrigation rehabilitation initiatives (with support of the African Development Bank (AfDB)), and planned expansion and new development (with the support of IDB) as part of the National Rice Development Strategy (NRDS). The recent rehabilitation of medium-scale irrigation schemes Mubuku (Kasese District), Olweny (Lira/Dokolol Districts), Doho (Butaleja District), and Agoro (Kitgum District) are evidence of this commitment. In addition, JICA is actively supporting technical and human resource development for this support through the Crop Development Directorate within MAAIF. The project therefore builds on the experience gained from these initiatives, particularly with respect to water management and prevention of lowland degradation, but also in relation to the formation of effective water users’ groups within the relevant agricultural cooperatives.
- c. The project will support the development and use of ICT tools and approaches (internet and radio-based) to agricultural extension – i.e.-extension. The proposed system will complement (not replace) the services that can be provided through in-person contact between agricultural advisors and farmers. The proposed system will give farmers and their advisors much improved interactive access to valuable information (agronomic, animal husbandry, weather, market-related, etc.). The design of this system builds on and scales up the experience of several successful ongoing programs (including the Grameen Foundation program in Uganda, which is already servicing some 250,000 farms).
- d. The project will depend heavily on farmers’ organizations at local level (ACCES) to plan, take decisions, and make investments (in post-harvest handling facilities, processing facilities, equipment that could serve many farms on a fee or rental basis, etc.) crucial for the success of the farm economy. These organizations are still developing the capacity to do this. However, successful experiences with building such capacity are accumulating in Uganda – and national-level offices of the farmers’ organizations are using that experience to work with their respective local chapters. The project will contract these organizations to build on their

¹⁰ Source: ODI. September 2008. “Towards ‘smart’ subsidies in agriculture. Issues from recent experiences in Malawi. *Natural Resources Perspectives* 116.

successes and to expand the scale of the capacity building they have already done with local chapters. Design of the project builds on the current dynamics in the Ugandan cooperative movement and will include support to formation of water users' groups within those ACCEs entrusted with irrigation management.

- e. The professionalism of cereal bulking, warehouse management and grading of cereals, rice, and beans is a key success factor of the project. The knowhow with respect to warehouse management is available in the Ugandan coffee sector as well as in large-scale cereal trade. Agribusiness initiatives such as the Joseph Initiative¹¹ specialized in village-level buying, warehousing, processing, and marketing could be integrated into the project to ensure a coordinated marketing value chain for farmers. In this sense, these aspects of the proposed project will build on experience and lessons learned in the Ugandan context.
- f. The proposed project includes activities on both the production and marketing ends of the value chain for the five selected commodities. Experience in many other settings (in Africa and globally) suggests that investing in activities on one side of the value chain in isolation from investing in the other side often leads to results that fall short of expectations. Peer reviewers have counselled that, despite the complexity of trying to do several things through one project, experience from many other projects and countries shows that working on all aspects of the value chain (farm inputs, on-farm production, post-harvest handling and processing, marketing of farm products) within a single project is desirable. This view has informed the approach of the proposed project, and its components and scope reflect this.
- g. Given the ambition and multidimensionality of the proposed project, building in implementation approaches that make the project manageable is very important. Experience in Africa and globally suggests that starting small (even if multidimensional) can make implementation much more successful. Accordingly, the proposed project will adopt a phased approach, starting in a small number of clusters with one or two commodities, and will then build toward broader geographic coverage and coverage of all five selected commodities.
- h. MAAIF will need to augment its own capacity in order to implement ACDP. Therefore, a PCU will be established to take responsibility for project implementation. The PCU will be housed within MAAIF. Specified and dedicated staff will be contracted to support MAAIF in the implementation of ACDP.
- i. Funds from the ongoing ATAAS project will be reallocated to finance start-up select activities to be scaled up under the ACDP. It is expected that this will speed up implementation substantially and ensure a solid start to the project – allowing for any further detailed planning that may be needed to be carried out (including piloting).

¹¹ The Joseph Initiative is a fully integrated agricultural value chain enterprise in Masindi that promotes maize production by providing production credit and advice to farmers, purchasing maize produced, warehousing it, processing it (using a state-of-the-art processing facility), and selling the processed maize on local and regional markets.

IV. IMPLEMENTATION

A. Institutional and Implementation Arrangements

Overall Coordination and Management

39. **The implementation of ACDP will involve a number of key agencies at both the national and local level, and private sector implementation of some activities.** Given the scope of project activities, several ministries will be involved in ensuring guidance and oversight of the project. Further, ACDP activities will be relevant for a variety of stakeholders at every level. Accordingly, the project will require strong coordination of activities and consultation at the national as well as at cluster and local levels.

40. Overall responsibility for project implementation will lie with MAAIF. Given the demands required for project management and coordination and MAAIF's limited capacity, a PCU is being established within MAAIF to take on responsibility for day-to-day management of the project. A National Project Steering Committee (NPSC) will be formed to provide consultation and oversight to MAAIF and the PCU at the national level. A National Stakeholder Platform (NSP) will be convened by MAAIF once a year (or as needed) to develop awareness of ACDP and to obtain feedback on its design and implementation. A Cluster Multi-stakeholder Platform (CMSP) will be constituted in each of ACDP's 12 clusters. The CMSPs will work closely with district governments to provide consultation, coordination, and oversight at the local level.

Implementation of Components

41. **The PCU will be responsible for project management,** including: planning, implementation, capacity building (MAAIF staff), monitoring, and reporting. A Project Coordinator (PC) will be appointed by MAAIF to manage the project and to take responsibility for day-to-day management of the project. The PC will be the head of the PCU. The PC will report to a Task Manager for the Project (who will be designated by MAAIF). The Task Manager will be supported by Component Managers in the implementation of the project. MAAIF will sign MoUs with all implementing partners including local governments. The staff of the PCU will be stationed within the relevant directorate and departments of MAAIF and will work alongside MAAIF's core personnel. The project will have the flexibility to recruit staff on contract who will be assigned to units that need strengthening.

42. A summary of the institutional arrangements and designation of responsibilities by component is provided below. A draft Project Implementation Manual (PIM) prepared by the GoU provides details on implementation arrangements for each component and guidelines for implementation modalities including procurement, financial management (FM), environmental and social safeguards, monitoring, and attention to youth/gender issues, etc.

43. **Component 1.** MAAIF's Department of Crop Production and Marketing (DCP&M) will be responsible for the coordination of the Component. MAAIF will contract a Voucher

Management Agency (VMA) to launch and implement this Component.¹² The VMA will be contracted through a competitive process – initially on a 3 year contract. The performance of the VMA will be evaluated at the Mid-Term Review of ACDP. Among the responsibilities of the VMA will be to develop the capacity of MAAIF to manage the voucher scheme. Software used by the VMA would also be handed over to MAAIF. The VMA will subcontract selected elements (for example, some aspects of training of farmers under subcomponent 1.2) of the implementation of these programs. The VMA will be contracted during year 0 to implement the initial pilots of the e-Voucher program. Its performance will be monitored and evaluated on an annual basis and its performance will be reviewed at the Mid-Term Review of ACDP to determine if it would be possible to hand over management of the voucher program to MAAIF in order that MAAIF itself might manage the voucher program. MAAIF's DCP&M will work closely with the VMA in the implementation of sub-component 1.3. MAAIF's Agribusiness Unit will work closely with an agricultural inputs specialist/advisor in the PCU in the formulation and implementation of ACDP work plans for sub-component 1.3. This will include the formation and activities of an agricultural inputs working group that will include representatives from MAAIF's DCP&M and its Department of Crop Inspection and Certification (DCI&C), input associations (e.g., Uganda National Agro-dealer Association (UNADA), Uganda Seed Trade Association (USTA), and Fertilizer Market Development Council (FMDC)), and other stakeholders.

44. Coordination will be necessary between NAADS and ACDP to ensure that the input program of NAADS does not overlap with, or work at counter-purposes, to the e-Voucher program under ACDP. This coordination will be the responsibility of MAAIF – and will also be monitored and overseen by the National Project Steering Committee (NPSC).

45. **Component 2.** Overall coordination of Component 2 will be led by MAAIF through its Irrigation Unit within the Department of Farm Development (DFD). DFD will coordinate subcomponent 2.1 (planning for irrigation and drainage infrastructure development) in collaboration with the Ministry of Works and Transport (MoWT) for access roads and National Environment Management Authority (NEMA) for wetland protection and conservation. A key feature of the implementation will be MAAIF support to District Coordination Teams (DCTs) to ensure that the specific institutional arrangements and agronomic practices associated with each irrigation scheme are developed in a consistent fashion. These same agencies will also implement training for water users' groups in the operation and maintenance (O&M) of irrigation schemes under subcomponent 2.2. For subcomponent 2.3 (integrated soil and water conservation/management design for irrigation areas and associated buffer zones), cooperative agreements will be set up with the Ministry of Water and Environment (MWE) for water use and NEMA for environmental assessment. For any subsequent investments in works, the Nile basin members will be informed by the government in case of water withdrawals over and above evapotranspiration from existing/non-irrigated wetlands within the Kyoga sub-basin of the Nile.

46. **Component 3.** MAAIF's Agribusiness Department will have responsibility for the implementation of Component 3. Training and technical support to local-level ACCEs and other

¹² The use of a VMA follows the example of Nigeria, where this type of modality has been used effectively for the e-Wallet program (for distribution of seed and fertilizer).

market actors under sub-components 3.1, 3.3(b), and 3.3(c) will be provided under contract to the PCU by apex farmers' organizations (such as the regional teams of Uganda Cooperative Alliance (UCA) and other third-level farmers' organizations), with technical support, as required, provided by contracted agencies. Terms of reference (ToRs) for this work, as well as training curricula and materials, will be developed by MAAIF's DCP&M and Agribusiness Unit (with assistance from consultants, including the national apex organizations, as needed) and in collaboration with the National Commodity Platforms that have been formed by private sector stakeholders. The implementation of sub-component 3.2 will be under contracts secured and managed by the PCU, and supported by the DFD in collaboration with the MoWT, the Ministry of Local Government (MoLG), and the district LGs. Training and technical support to national-level apex farmers' organizations under subcomponent 3.3(b) will be provided by MAAIF (with the support of consultants, as needed). The matching grant program under subcomponent 3.3(c) will be managed by the ACDP PCU. The PCU together with contracted national-level apex farmers' organizations will provide TA to eligible ACCEs as needed to help them with the formulation of proposals. Cluster committees will review proposals annually and endorse a group of proposals (totaling to no more than an assigned per-cluster ceiling) for consideration on a competitive basis by the matching grant committee of the ACDP PCU.

47. **Component 4.** Overall project management and administration (subcomponent 4.1) will be the responsibility of MAAIF and will be carried out by the PCU. At the cluster level, the CMSP will be responsible for implementation and reporting. The Department of Planning and M&E in MAAIF, in conjunction with the PCU, will be responsible for consolidation of an annual work plan and budget (AWP&B) for ACDP as well as M&E. For sub-component 4.2, management of ACDP activities related to input and output policy and regulatory functions and standards will be the responsibility of MAAIF's DCI&C, working in close collaboration with the National Commodity Platforms. An advisor for these functions will be situated within the PCU to oversee ACDP support in these areas. MAAIF's Department of Planning will have responsibility for sub-component 4.3. For this sub-component, MAAIF's Agricultural Resource Centre will manage project activities with the support of the PCU. A firm will be contracted to support the Agricultural Resource Centre in the establishment and operation of the Agricultural Information Platform.

B. Results Monitoring and Evaluation

48. **The project M&E system will be embedded in MAAIF's existing M&E structure.** All implementing entities (IEs) will participate in the process of data collection, compilation, and reporting. The M&E specialist in the PCU will be responsible for the day-to-day oversight and follow-up of ACDP M&E activities (internal monitoring and data collection, compilation of quarterly progress reports, preparation of supervisions and reviews, organization of reference surveys). All M&E activities will be supervised by the M&E Working Group (WG) of MAAIF, led by the Assistant Commissioner for M&E of the Department of Agricultural Planning. Capacity building and TA in M&E will be performed through MAAIF's Department of Planning and M&E and private providers.

49. **Roles and responsibilities for M&E (data collection, MIS management, and quarterly and annual progress reports) will be established in MoUs and contracts between**

MAAIF and stakeholders at the national and district levels. Arrangements for M&E under ACDP will be synchronized with M&E arrangements under ATAAS. All M&E instruments and tools will be based on standardized formats (designed jointly by the Planning Department and the PCU) and harmonized with the upcoming MAAIF ICT system, once established.

50. **The ACDP results framework will be mainstreamed in the overall MAAIF results framework** (as well as the one of the Ministry of Water and Environment regarding Component 2) and will reflect the DSIP indicators (including the change in yield of coffee, maize, rice, and cassava (beans not included), the number of adopted technologies, and the percentage of change in sales of agro-enterprises. The achievement of ACDP impacts and outcomes will be measured by a set of qualitative and quantitative indicators, including the World Bank’s core indicators. Reference surveys will include: (a) baseline, mid-term, and end-of-project surveys; and (b) secondary sources, such as the Uganda Census of Agriculture and the Living Standards Measurement Study – Integrated Survey on Agriculture, and others. Gender-disaggregated targets and data will be entrenched in the M&E system based on the surveys.

51. **The project will identify and address issues specific to men, women, and youth during implementation.** At the beginning of the project, a gender analysis will be carried out of the selected commodity value chains to understand the critical gender gaps to support how this can be best addressed. Based on the findings of this analysis, the project will also establish a baseline on which realistic targets will be detailed.

C. Sustainability

52. **Expectations for the success of ACDP are predicated on** the effectiveness of training for farmers receiving support under the e-Voucher program, on the effectiveness of capacity-building efforts to improve management by cooperatives, and on the effectiveness of value addition in cereal trade through improved post-harvest handling and marketing. Enhanced safeguards and M&E measures will be put in place to ensure that these success factors are closely monitored and maintained.

53. **The economic sustainability of project activities will depend to a large extent on the degree of ownership and internal management capacity of farmers and farmers’ cooperatives, and on their capacity to manage and build upon the investments made under the project.** If these resources are managed well, the investments should be quite profitable and will likely catalyze even further investment and growth. The quality of institutional capacity building and mentoring as well as their demand-driven character plays a critical role.

V. KEY RISKS AND MITIGATION MEASURES

A. Risk Ratings Summary

Risk	Rating
Stakeholder Risk	Moderate
Implementing Agency Risk	
- Capacity	High

- Governance	High
Project Risk	
- Design	Moderate
- Social and Environmental	Moderate
- Program and Donor	Low
- Delivery: Monitoring and Sustainability	Moderate
Overall Implementation Risk	High

B. Description

54. **Policy environment.** In 2012, MAAIF developed a comprehensive plan to operationalize the Agriculture Sector DSIP. The activities proposed under the DSIP feature prominently in ACDP. Accordingly, there has been strong ownership of this project and broad consensus about its focus and design. This has been systematically and clearly confirmed and reinforced at the highest level of government (including MAAIF, MoFPED, and the Office of the Presidency). This strategic consensus is a very valuable starting point for the proposed project, and serves as an important anchor to mitigate against risks associated with the possibility of substantial fluctuation in the overall direction of agricultural policy and programming.

55. **However, the existence of a coherent and broadly shared and stable agricultural strategy notwithstanding, two aspects of GoU programming in the agriculture sector pose risks to the sector’s future and the likelihood of ACDP’s success.** First, a heavy and growing level of investment in public provision of agricultural inputs directly to farmers has been instituted in recent years through NAADS. This practice is nearing the level of US\$100 million per year. It is problematic in that if continued in the ACDP clusters, it could crowd out interest in the e-Voucher scheme. This risk will be addressed by ensuring that no overlap exists between the ongoing NAADS input distribution and the e-Voucher scheme. The current input distribution system is also problematic in that, as configured, it crowds out and hinders the development of a private sector input distribution system. This risk is addressed in that the project will introduce an alternative way of supporting the expanded use of purchased inputs – i.e. the input voucher scheme. This scheme will not undermine advisory services (since it will be managed through a separate institutional structure). Further, it will not be structured in a way that will undermine development of the private sector input distribution system – to the contrary, it will rely on (and in this sense support the development of) the private sector distribution system. There is a strong possibility that consideration will be given to phasing out the current input distribution scheme in favor of the input voucher scheme under ACDP. If this eventuality occurs, this will be an important positive impact of ACDP.

56. **The second aspect of the GoU’s current strategic direction that poses a risk to ACDP is the recent (and slowly developing) decision to remove responsibility for agricultural extension from NAADS in favor of placing it in MAAIF.** While the details of this change are still being finalized, substantial disruption to ongoing service will occur (the several thousand advisors in the field under NAADS have been let go – and under even optimistic projections, it is likely to take well over a year to replace them in the field under the new institutional configuration). ACDP will not be able to rely on the advisory services/extension program at field level for some time. Several measures are being taken to

compensate for this risk, including, *inter alia*: (a) expanded investment (under the restructured ATAAS) in the capacity of NARO's zonal agricultural R&D institutes to enhance their capacity to work with farmers; (b) development of e-extension services (under ACDP); (c) support for the rapid development of a new strategy for extension with a practical implementation plan to minimize the level of disruption to extension services in the field and to minimize this disruption's duration; and (d) support for farmers' organizations to provide extension and advisory services for their members. These mitigation efforts should shield ACDP from potential negative effects of a prolonged absence of effective agricultural extension. However, such an absence of agricultural extension will have broader impacts, including hampering the possible scaling up of ACDP-type interventions in additional districts. Consequently, the broader risks posed by this development remain substantial.

57. **Governance and corruption.** MAAIF will take primary responsibility for the implementation of the proposed project. MAAIF is significantly understaffed (according to the recent institutional assessment) and due to this and related capacity constraints it has typically struggled to implement important aspects of its mandate. The implementation of the proposed project, with its holistic and relatively complex structure, will pose a significant challenge to MAAIF – and the implementation risks are for this reason judged to be relatively high. These risks will be mitigated in several ways. A PCU will be established within MAAIF to manage project implementation. Substantial capacity will be established within the PCU (in terms of staff and other resources) to enable it to manage implementation successfully. Substantial capacity building will be provided to producer organizations and other local groups involved in the project to ensure that each will be able to play its role effectively. Further, a number of important implementation roles will be sourced from the private sector. All of these measures will help to mitigate the risks associated with the capacity constraints inherent in MAAIF itself.

58. **In recent years, Uganda's development programs have been affected by poor governance and corruption.** To address this, the government, with the support of DPs, is putting in place several measures. One of the most important ways in which this project will contribute to better management of public resources is through the input voucher scheme. This program will help the GoU move from its current public input distribution program under NAADS (characterized by GoU direct procurement and distribution of free inputs to farmers) to a much more transparent and controllable system (the e-Voucher scheme) explicitly designed to minimize opportunities for mis-management of funds in this important activity.

59. **Private sector and producer participation.** The private sector and producer organizations in Uganda are vibrant and becoming more successful. However, improvements in the policies and support programs of the GoU can help them to develop even further. The proposed project will contribute to the further development of both. Under ACDP, producer organizations will play a prominent role in decisions about the use of public resources at the district level and below – and will be provided with capacity-building support to help them play this role effectively. This will help to make decisions more relevant and responsive to the needs of the sector. The project will rely heavily on private sector delivery of important public services as well as relying on the private sector for provision of publicly funded programs (such as the input voucher program). In this respect, delivery should be much more efficient than would be the case if this program were implemented by the public sector – and the program will help to stimulate development of the private sector itself. This will lead to a more efficient and competitive

agriculture sector and to substantial growth in the sector. These developments are expected to be self-reinforcing and self-sustaining and to significantly reduce risks associated with the proposed project.

VI. APPRAISAL SUMMARY

A. Economic and Financial Analyses

60. **The financial and economic analyses, as well as the analysis of targeted value chains, confirm the viability of the project concept.** The economic analysis is based on the economic benefits and costs of the project as a whole. The economic internal rate of return (EIRR) of the base case scenario is 16.4 percent. The sensitivity analysis confirms that the EIRR is quite robust, mainly thanks to the e-Voucher scheme that allows reaching a significant number of beneficiaries. An EIRR of 12 percent can be obtained if at least 75 percent of the projected number of beneficiaries are reached.

61. **The financial analysis includes nine farm models that will be promoted by the e-Voucher scheme.** These models were designed for the use of inputs on one acre of land in line with the package subsidized by the e-Voucher scheme. All models show a solid positive impact of fertilizer and improved seeds on crop yields, positive incremental net revenues, and favorable benefit/cost (B/C) ratios.

62. **With respect to regional competitiveness of targeted value chains, the following risk and key success factors were identified:** (a) cultivation of rice is quite profitable in Uganda. In the case that the EAC import duty on imported rice (75 percent of CIF price or US\$200/MT) is maintained, the rice model shows positive benefits. If the import duty is reduced to 25 percent (as in Kenya) or abolished, pressure will be placed on the domestic price of rice with a significant reduction in the profitability of the farm rice models, but the activity will remain economically profitable; (b) for maize, the focus should be on farm productivity, bulking, and drying, but not on seasonal storage, which is risky due to price fluctuations; (c) farm gate prices of cassava are currently high, which is positive for interventions at the farm level; proven potential to improve traditional processing and develop markets for new products (high-quality cassava flour, animal feed, starch) is limited as no models for post-harvest innovations have been tested in Uganda; and (d) models for development and rehabilitation of coffee plantations are clearly identified, however, no models have been identified to confirm the profitability of improved post-harvest handling and marketing.

63. **The EIRR on proposed investments in the irrigated rice schemes was analyzed in greater detail.** The EIRR of the base case scenario is 14.7 percent, which is satisfactory and above the 12 percent threshold. Overall, the assumptions of the base case scenario are conservative in terms of the output farm gate price for paddy. The proposed unit costs for investments are quite low, but reflect the regional prices for similar interventions.

64. **The economic analysis of the irrigated rice component highlights some important features useful in guiding the investment and site selection** (after prefeasibility studies). The unit costs per ha of sites selected for rehabilitation must be monitored carefully, as an increase above 15 percent will drive the EIRR of the rice component below the 12 percent threshold level.

Cropping intensity is crucial. Below a ratio of 1.65 (65 percent of land with double cropping), the EIRR is not satisfactory so sites will need to be selected accordingly. Land utilization after rehabilitation will also need to be above 85 percent (e.g., no more than 15 percent of the rehabilitated land can remain idle after rehabilitation); below this level the investment will not generate a satisfactory EIRR. Follow-up support regarding land use after allocation to beneficiaries will be critical to ensure sustainability of the investment.

65. **In conclusion, the EIRR of the irrigation investments that could be undertaken as a result of the prefeasibility and feasibility studies supported under ACDP indicate that such investments will be viable** – but the outcome is sensitive to crop intensity and land utilization, the reference price of paddy, and the unit cost of rehabilitation. A careful assessment of overall conditions for the profitability and competitiveness of the investment is required, namely: (a) prioritization of schemes with low unit costs of infrastructure development; (b) prioritization of schemes with sufficient water to allow double cropping of rice or a rotation of rice and vegetables; (c) ensured scheme management, including land allocation, utilization, and perimeter maintenance; (d) closely monitored crop yields and use of corrective measures, such as introduction of new high-yield varieties, if necessary; and (e) support for farmers’ access to and adoption of key production inputs, as well as post-harvest processing and marketing. This latter point is something to which ACDP can contribute.

66. **The activities to be supported under ACDP will have a high rate of return, and could only be done by the public sector.** The partial (and diminishing and time-bound) subsidy to be supported under Component One is intended to bring farm-level productivity to a new and higher level. This will lead to higher levels of input use and to higher volumes in commodity markets for coffee, maize, beans, cassava, and rice. These direct impacts will be beneficial for incomes on the farms involved. For those farms, the quantity and quality of marketed output will go up, while input prices will go down and inputs will be more readily available. As a result of ACDP, output prices will rise, and farmers will have more control over when to market their produce. Many wider effects will emanate from these developments. Farm supply businesses will be able to grow, as will businesses involved in trading commodities. Consumers will benefit from less expensive food commodities. Spillover effects will be good for rural communities and for the national economy. None of these would be possible without collective action in the form of the public sector investments (including the subsidy through the voucher scheme) to be implemented under ACDP. No private sector entity would provide the financing for these activities because it would not be possible for such a financier to fully recover the benefits generated by these investments – i.e., social benefits will far exceed the private benefits that would be recoverable by a private sector financier.

67. **The World Bank brings substantial added value to the process of the design, financing, and implementation of ACDP.** The Bank was able to bring global experience to bear upon several aspects of the program including, in particular, the design of the e-Voucher scheme and of the approaches to strengthen the output marketing aspects of the value chain for the selected commodities. The Bank also mobilized resources to finance several aspects of program design (including, *inter alia*, resources from Korea to support the development of ICT aspects of ACDP. The Bank also brought several key partners into the design and implementation of the program – while facilitating a process of coordination with other programs in Uganda. Further, the Bank coordinated the design of ACDP with the design of, and support

from the World Bank for, the ongoing ATAAS project. More generally, the Bank mobilized globally-procured technical support and attention to various aspects of project design.

B. Technical

68. **The proposed project supports several categories of activities:** (a) increasing the adoption of purchased inputs (particularly improved seed(lings) and fertilizer) including measures to improve the scale and efficiency of markets for these inputs; (b) planning for rehabilitation and expansion of small irrigation schemes for rice production; (c) supporting investments in post-harvest processing, handling, and transport of the focus commodities, including measures to improve the scale and efficiency of markets for these commodities; and (d) capacity building for the key institutions and actors.

69. **Several measures will be supported that are related to agricultural input markets.** The principal mechanism to be developed is the e-Voucher scheme. This mechanism has been proposed on the basis of experience in other countries (Nigeria, for example) and also on the basis of existing and widespread successful experience in Uganda with the use of mobile phone technology for financial transactions. Best practice globally will be employed in the design of the e-Voucher mechanism.

70. **With respect to irrigation development, plans have been substantially modified from the original proposal so as to reduce costs and to make the proposed activities economically viable and environmentally sensitive.** ACDP will support plans for investments focused on bringing existing concentrations of lowland rice cultivation under full control together with mitigation measures to prevent soil and water degradation. No dams are envisaged and built infrastructure will be kept to a minimum, relying on local materials and farmer-based O&M to intensify production. With this approach, likely costs have been reduced and the economic analysis shows that the proposals likely to come out of the prefeasibility and feasibility studies supported under ACDP will likely be economically justified if productivity in production is raised to reasonable levels (which appear to be achievable).

71. **The proposed project will support several measures related to the output aspects of the value chain for the included commodities.** This will, in part, be achieved through the use of enterprise development grants to support investment in storage facilities, processing equipment, and other physical equipment and infrastructure to facilitate value-added at local levels and capacity to bulk high-quality commodities for export markets. Best practice from other African countries and from similar situations globally will inform the design of the instrument.

72. **The proposed project will provide significant levels of training and capacity building at MAAIF and at the district level with district officials, but also for producer organizations and other stakeholders at every level.** The project will draw from global best practice and from African and Ugandan experience in developing an approach and methodology for such support.

C. Financial Management

73. **A Financial Management (FM) assessment was conducted at MAAIF headquarters and in seven sampled districts** (Palissa, Mbale, Gulu, Apac, Kasese, Kyenjojo, Hoima, Masindi, and Kabale). **The objective of the completed FM assessment was to determine whether the IEs have acceptable FM arrangements in place that satisfy the World Bank’s Operation Policy/Bank Procedures (OP/BP) 10.00.** These arrangements will ensure that the IEs: (i) use project funds only for the intended purposes in an efficient and economical way; (ii) prepare accurate and reliable accounts as well as timely periodic financial reports; (iii) safeguard assets of the project; and (iv) have acceptable auditing arrangements. The FM assessment was carried out in accordance with the Financial Management Manual issued by the Financial Management Sector Board on March 1, 2010.

74. **The Permanent Secretary (PS) of MAAIF will be the overall accounting officer for the project.** MAAIF’s Principal Accountant will be responsible for the FM functions under the project. MAAIF will also recruit a project accountant to support MAAIF accounting staff assigned to the project within six months of project effectiveness. The accounting function will be managed in accordance with the new The Public Finance Management Act 2015 together with the Treasury Accounting Instructions to follow, Local Government Financial and Accounting Manual 2007, Local Government (Financial and Accounting) Regulations 2007, and the provisions of the PIM, which will include requirements specific to Bank-financed projects.

75. **MAAIF will open a Designated Account denominated in US dollars (US\$) in the Bank of Uganda (BoU) to which disbursements from the Credit will be deposited.** Payments in US dollars will be made from this account. MAAIF will also open a Project Account denominated in local currency in the BoU into which transfers from the Designated Account (for payment of transactions in local currency) will be deposited. The signatories for the project will be selected in accordance with the Treasury Accounting Instructions of 2003.

76. **The GoU is rolling out an Integrated Financial Management Information System (IFMS) and implementing the Treasury Single Account (TSA).** The proposed banking arrangements above will be reviewed as the reforms are extended.

77. **MAAIF will use the report-based disbursement method.**

78. The MAAIF Internal Auditor in collaboration with district internal auditors will be required to conduct semi-annual internal audit reviews on the project and to submit the report to the Bank within 45 days after the end of each semester. The resources for the reviews by MAAIF and district internal auditors will be provided for under the project.

D. Procurement

79. **Procurement will be carried out in accordance with the World Bank’s “Guidelines: Procurement of Goods, Works and Non Consulting Services under IBRD Loans and IDA Credits and Grants by World Bank Borrowers”** dated January 2011 and revised July 2014 (Procurement Guidelines); **“Guidelines: Selection and Employment of Consultants under IBRD Loans and IDA Credits and Grants by World Bank Borrowers”** dated January 2011 and revised July 2014 (Consultant Guidelines) as stipulated in the Financing Agreement.

80. At the national level, procurement will be conducted by MAAIF. The major procurements at this level will include: (i) a firm to manage the e-voucher and its training program to build MAAIF capacity to manage the e-voucher scheme; (ii) firms to carry out prefeasibility and feasibility studies and designs under Component 2; (iii) firms to carry out rehabilitation of road chokes; and (iv) a short term TA to support the establishment and operations of the Agricultural Information Platform.

81. **At the local level, procurement shall be conducted by participating individual farmers who shall procure agricultural inputs using the-Vouchers received under the scheme.** Farmers will procure these inputs themselves from accredited dealers following informal shopping and/or direct contracting. The main risks are: (i) insufficient availability of quality inputs given the increasing volumes purchased annually; (ii) high purchase prices by farmers due to non-availability of price information or overcharging by input dealers; and (iii) collusion between providers and farmers to defraud the e-Voucher system, leading to leakages. These risks shall be mitigated by: (i) provision of price information to farmers to guide their purchase; (ii) timely provision of aggregated demand information to providers to enable them to plan their production and distribution; (iii) the requirement for accredited farmers to always publicly display the price of inputs as an accreditation condition; and (iv) the revocation of accreditation of errant providers.

82. **The e-Voucher matching grants program is critical for the success of the project and its selection will be a complex but important procurement process.** The firm to manage this scheme is to be procured as a management services provider and the Standard Bidding Document for procurement of management services shall be adapted for use in hiring the firm. The main risks involved in this procurement process are: (i) poor response from qualified bidders given the complexity and scale of the contract; and (ii) insufficient experience and staffing in MAAIF to define the requirements and manage the procurement and supervision of the firm. This shall be mitigated by: (i) an advisor with international experience in establishment of similar vouchers to support definition of requirements and procurement and management of the firm including possible market stimulation among bidders; and (ii) wide advertising of the procurement to improve potential bidder response as well as mini road shows to stimulate the market.

83. In light of the complexity of the procurement and the weak capacity within MAAIF, the risk to procurement is rated **High**.

E. Social (including Safeguards)

84. **This project will have several positive social impacts and benefits for farmers and other value chain actors at the local, district, and national level.** It will empower more women and youth to make decisions, invest in agriculture, and improve their social and economic status for the family's overall wellbeing. It will also bring much needed support to water users' groups so that they can better organize water management and maintenance of catchments to ensure irrigation sustainability. The process has been designed to ensure the inclusion of women and youth in the management of farms (and/or agribusiness) enterprises. Affirmative actions on behalf of youth and women will include, but not be limited to, their deliberate inclusion in training, financial access, and access to inputs. The project will take

affirmative action necessary to target 40 percent men, 40 percent women, and 20 percent youth in all its activities related to increasing equity in agriculture.

85. **Monitoring of project activities will include generation of gender- and age-responsive data to provide for proportions of project beneficiaries that are male, female, and youth.** MAAIF will undertake an analysis of these findings to inform the development of measures that might be taken to ensure that all people actively engaged in farming in the targeted areas (particularly women and youth) are provided with support under the project that is appropriate and useful for their particular situations. Indicators will be developed to allow the participation of women and youth to be monitored – and baseline information will be established for the selected commodities in all clusters to establish gaps and set realistic indicators that will inform the M&E. In addition, land ownership and conflict analysis will be undertaken in conflict-prone agricultural areas such as in the irrigation schemes and post-conflict areas to inform the management of possible risks at implementation.

86. **The regular use of mobile technologies and radio in the everyday lives of farmers will enhance the status of users and impact a broader rate of mobile technology adoption.** The positive social impacts will be further strengthened by including a comprehensive and systematic institutional capacity-building support to cooperatives to ensure that farmers' organizations have the required management capacity, which will lead to farmer empowerment and ownership.

87. **The project will support a range of subcomponents, some of which will require land acquisition which could potentially lead to involuntary resettlement and/or restricted access to productive natural resources or livelihoods.** The project will involve land acquisition for the infrastructure under rehabilitation of access roads and establishment of post-harvest handling investments, e.g., storage and value addition facilities. The exact locations for these project activities will only be determined after prefeasibility studies have been undertaken for the target locations in the geographic clusters.. The World Bank's Policy on Involuntary Resettlement (OP/BP 4.12) is triggered and a Resettlement Policy Framework (RPF) has been prepared to mitigate any associated risks. The RPF provides guidance for the preparation of site-specific Resettlement Action Plans (RAPs) during project implementation. The RAPs will be informed by site-specific land studies and social assessments of the project areas. The land study will provide for insight into land ownership status, including occupants, users, claimants, etc., and identify potential issues likely to arise out of land taking for project activities based on historical and other factors. The study will also propose recommendations for addressing land tenure and water resource issues. Site-specific social and environmental assessments will be undertaken during project implementation and will include a gender analysis to provide information on the roles of men, women, and youth in agriculture-related activities in the cluster areas and how they might be impacted. The studies will be undertaken in tandem with the prefeasibility studies after project effectiveness in the first year. The RPF was cleared by the World Bank and disclosed in-country on December 2, 2014, and at the World Bank Infoshop on December 11, 2014.

88. The operation will include measures aimed at strengthening MAAIF for social management capacity.

F. Environment (including Safeguards)

89. **The project has been assigned Environmental Category B.** The project triggers: Environmental Assessment (OP 4.01) because of the likely environmental impacts the project will pose; Natural Habitats (OP 4.04) because the irrigation subcomponent will involve use of wetlands; Pest Management (OP 4.09) because Component 1 will involve procurement and use of pesticides; Physical Cultural Resources (OP 4.11) because of the associated planning of irrigation and access roads; and Projects on International Waterways (OP 7.50) because irrigation activities are likely to exploit rivers that all drain into the Nile basin. All irrigation schemes taken to prefeasibility stage will also be subject to review through the Catchment Management Plan (CMP) process under MWE. The project will also involve construction of grain storage and processing facilities. Some of the associated negative environmental and social impacts include water abstraction on downstream users, loss of wetland habitat as a result of the irrigation infrastructure needed, point and nonpoint pollution of water sources, soil erosion and siltation, and water and land use-related conflicts. Most of the environmental impacts will be of low-intensity, minor, site-specific, and readily managed by farmers, with guidance from the respective district local governments. The specific location/site and scope of all project activities are not yet known. Therefore, an Environmental and Social Management Framework (ESMF) for the entire project was prepared and disclosed in-country on December 2, 2014, and at the World Bank Infoshop on December 11, 2014. Once specific information for individual subprojects is available, site/project-specific Environmental and Social Impact Assessments (ESIAs) and Environmental and Social Management Plans (ESMPs) will be prepared during implementation and prior to start of any physical works.

90. **Natural Habitats (OP 4.04):** The watershed-related project activities will be carried out in wetlands, rivers, and lakes. These habitats may be affected by the proposed project. All potential natural habitats that may be affected will initially be screened under the ESMF and then subsequently assessed under the ESIAs and management of any potential impacts included in the respective subcomponent ESMPs.

91. **Pest Management (OP 4.09):** Under the proposed project, improved and increased agricultural activities and production may result in increased use of pesticides. A Pest Management Plan (PMP) was prepared and disclosed both in-country on December 2, 2014, and at the World Bank Infoshop on December 11, 2014. A simplified guide on use and management of pesticides shall be included in the PIM.

92. **Although project activities do not involve major civil works, physical and cultural resources may be encountered, either in the rehabilitation and/or extension of roads in the project areas or during construction of the storage facilities.** The Physical Cultural Resources Policy (OP/BP 4.11) is triggered, so the ESMF includes a “chance finds” procedure.

93. **Safeguards Capacity at MAAIF:** The implementing agency does not have an in-house environmental safeguards capacity and will therefore recruit an environmental specialist in the PCU to guide implementation of environment-related activities and aspects of ACDP. In addition, the respective District Environment Officers shall be involved in technically guiding implementation of project subcomponents that have environmental aspects, especially the

irrigation and road works, watershed management activities, pesticides and fertilizers use, and grain storage activities.

G. Other Safeguards Policies Triggered

94. **Projects on International Waterways OP/BP 7.50:** The riparian notification of information on water withdrawal is applicable to all irrigation schemes in the Nile basin. Any water for irrigation which might be used under future investments would be withdrawn from the Nile basin watershed, which is shared by 11 countries (Burundi, Democratic Republic of Congo, Egypt, Eritrea, Ethiopia, Kenya, Rwanda, South Sudan, Sudan, Tanzania, and Uganda). The current White Nile flows are determined by releases at Jinja and lateral inflow from the Lake Kyoga subbasin. It is in this sub-basin where the schemes are located for which plans for irrigation will be prepared under the project. If all of these plans were to be developed into irrigation through future investments (beyond this project), the annual incremental water consumption over these 6,400 ha arising from double cropping of rice is estimated to be in the order of 400 mm. This would amount to an annual volume of 0.024 km³/yr of additional evaporative consumption. The total annual lateral inflow to Lake Kyoga is in the order of 4.042 km³/yr. Hence, the additional evaporative consumption by future irrigation of rice associated with the plans supported under this project would represent only 0.6 percent of annual inflows. This would constitute only a marginal increase over and above current rates of evaporation from existing lowlands and wetlands. When taken with the land and water conservation measures included in ACDP, the impact would be expected to be insignificant in relation to the overall water balance of Lake Kyoga, which discharges some 4.872 km³/yr into Lake Albert. The GoU requested the World Bank to assist in issuing the riparian notification. Accordingly, IDA issued the riparian notification on December 11, 2014. The notification process has been completed and no objections were received.

H. World Bank Grievance Redress

95. Communities and individuals who believe that they are adversely affected by a World Bank (WB) supported project may submit complaints to existing project-level grievance redress mechanisms or the WB's Grievance Redress Service (GRS). The GRS ensures that complaints received are promptly reviewed in order to address project-related concerns. Project affected communities and individuals may submit their complaint to the WB's independent Inspection Panel which determines whether harm occurred, or could occur, as a result of WB non-compliance with its policies and procedures. Complaints may be submitted at any time after concerns have been brought directly to the World Bank's attention, and Bank Management has been given an opportunity to respond. For information on how to submit complaints to the World Bank's corporate Grievance Redress Service (GRS), please visit <http://www.worldbank.org/GRS>. For information on how to submit complaints to the World Bank Inspection Panel, please visit www.inspectionpanel.org.

Annex 1: Results Framework and Monitoring

Country: Uganda

Project Name: Agriculture Cluster Development Project (P145037)

Results Framework

Project Development Objectives

PDO Statement

The development objective is to raise on-farm productivity, production, and marketable volumes of selected agricultural commodities in specified geographic clusters.

These results are at | Project Level

Project Development Objective Indicators

Indicator Name	Baseline	Cumulative Target Values						
		YR1	YR2	YR3	YR4	YR5	YR6	End Target
Yields of (MT/ha) of selected commodities (maize, rice, beans, cassava, and coffee) for the participating households (Metric ton)	Ri (harvest): 1000	1100	1200	1300	1400	1500	Ri: 1600	Ri: 1600
	Ma (hybrid): 900	1040	1180	1320	1460	1600	Ma: 1615	Ma: 1615
	Be (intercropping): 225	260	295	330	365	400	Be: 400	Be: 400
	Ca (Maize rotation): 3360	3360	4000	4700	5375	6050	Ca: 6720	Ca: 6720
	Co (Robusta new, kg/ha): 240	240	288	336	384	432	Co: 480	Co: 480
Increase (%) in maize, rice, beans, cassava,	Ri:	5					Ri: 50	
	Ma:	5	10	20	30	40	Ma: 50	50
	Be:	5	10	20	30	40	Be: 50	

and coffee production by participating farms in the project areas (Percentage)	Ca: Co: Baseline will be done by the spearhead team	5 5	10 10 10	20 20 20	30 30 30	40 40 40	Ca: 50 Co: 50	
Increase (%) in total maize, rice, beans, cassava, and coffee production in project area (Percentage)	Ri: Ma: Be: Ca: Co: Baseline will be done by the spearhead team	5 5 5 5 5	10 10 10 10 10	20 20 20 20 20	30 30 30 30 30	40 40 40 40 40	Ri: 50 Ma: 50 Be: 50 Ca: 50 Co: 50	50
Increase (%) of marketed produce for selected crops (maize, rice, beans, cassava and coffee) by the participating ACCEs in project area. (Percentage)	Ri: Ma: Be: Ca: Co: Baseline will be done by the spearhead team	5 5 5 5 5	10 10 10 10 10	20 20 20 20 20	30 30 30 30 30	40 40 40 40 40	Ri: 50 Ma: 50 Be: 50 Ca: 50 Co: 50	50
Direct project beneficiaries (Number) - (Core)	0	35,000	100,000	200,000	300,000	400,000	450,000	450,000
Female beneficiaries (Percentage - Sub-Type: Supplemental) - (Core)	25	28	31	34	37	40	50	50

Intermediate Results Indicators

Indicator Name	Baseline	Cumulative Target Values						
		YR1	YR2	YR3	YR4	YR5	YR6	End Target
Area under improved technology (seeds, fertilizer, etc.) (Hectare(Ha))	0	0	0	TBD	TBD	TBD	450,000	450,000
Percentage of farmers/a using improved agricultural technology (seeds, fertilizer, pest protection, small scale irrigation equipment, etc.) among the targeted beneficiaries (Percentage)	0	TBD	TBD	TBD	TBD	TBD	65%	65
No of participating farm households using post-harvest technology inputs (Number)	0							300,000
Number of farmers reached	-	30,833	138,750	240,500	370,000	444,000	444,000	444,000

through ICT innovations (Number)								
Level of satisfaction with ICT initiatives (Percentage)	0	50	60	70	90	90	90	90
Profit-cost ratio for supported commodities (in UGX) (Percentage)	Ri: 1,7 Ma: 1,59 Be: 1,48 Ca: 0,98 Co: 0	TBD	TBD	TBD	TBD	TBD	Ri: 1,53 Ma: 1,24 Be: 1,48 Ca: 1,43 Co: 1,53	1.53
Number of pre-feasibility studies for irrigation schemes completed (Number)	0	0	5	10	15	20	22	22
Number of designs for irrigation rehabilitation and expansion schemes completed (Number)	0	0	0	5	15	20	22	22
% of ACCEs and apex producer organizations with improved operating capacities (Percentage)	0	10	20	30	50	70	100	100

% increase in volume (MT) of selected commodities marketed by ACCEs in the targeted areas (Percentage)	0	-	-	-	-	-	60	60
Additional volume of storage capacity established through the project (MT) (Metric ton)	0							100
% of supported ACCEs having significantly invested in post-harvest and/or marketing (more than US\$5,000) (Percentage)	0	0	5	5	10	20	30	30
Number of road bottlenecks fixed (Number)	0	10	30	50	70	90	100	100
Functional national platform for exchange of market information and negotiation between ACCEs	No	0	0	0	1	1	1	Yes

and wholesale traders and agribusiness (# yes) (Yes/No)								
% of functional committees (Percentage)	0	50	-	-	-	-	100	100
% of district/national technical and financial reports timely and adequate (Percentage)	0	50	-	-	-	-	100	50
3. Percent (%) of result monitoring indicators reported on time as outlined in the M&E plan (Percentage)	0	100	100	100	100	100	100	100
4. Percent (%) of annual audit recommendations implemented (Percentage)	0	100	100	100	100	100	100	100

Indicator Description

Project Development Objective Indicators

Indicator Name	Description (indicator definition etc.)	Frequency	Data Source / Methodology	Responsibility for Data Collection
Yields of (MT/ha) of selected commodities (maize, rice, beans, cassava, and coffee) for the participating households	This indicator assesses the effectiveness of ACDP activities at increasing agricultural productivity (mostly due to increased inputs use) (disaggregated per commodity)	Annual	Studies and Uganda National Panel Survey (UNPS)	MAAIF/ UBOS PCU M&E Officer
Increase (%) in maize, rice, beans, cassava, and coffee production by participating farms in the project areas	This indicator measures the effectiveness of ACDP at increasing agricultural production at farm level (disaggregated by commodity)	Annual	Studies and/or UNPS	MAAIF / PCU M&E officer
Increase (%) in total maize, rice, beans, cassava, and coffee production in project area	This indicator tests the effectiveness of ACDP activities at increasing agricultural production at cluster level (disaggregated per commodity)	Annual	Studies and/or UNPS	MAAIF/ UBOS PCU M&E Officer
Increase (%) of marketed produce for selected crops (maize, rice, beans, cassava and coffee) by the participating ACCEs in	This indicator assesses the effectiveness of the ACDP's activities at increasing the part of agricultural production which is marketed at household level	Annually	MAAIF' PCU	MAAIF

project area.	(disaggregated per commodity)			
Direct project beneficiaries	Direct beneficiaries are people or groups who directly derive benefits from an intervention (i.e., children who benefit from an immunization program; families that have a new piped water connection). Please note that this indicator requires supplemental information. Supplemental Value: Female beneficiaries (percentage). Based on the assessment and definition of direct project beneficiaries, specify what proportion of the direct project beneficiaries are female. This indicator is calculated as a percentage.	Annually	MAAIF's PCU	MAAIF
Female beneficiaries	Based on the assessment and definition of direct project beneficiaries, specify what percentage of the beneficiaries are female.	Annually	MAAIF's PCU	MAAIF

Intermediate Results Indicators

Indicator Name	Description (indicator definition etc.)	Frequency	Data Source / Methodology	Responsibility for Data Collection
Area under improved technology (seeds,	Determine range of technologies disseminated through the project and	Annual	Progress reports	Implementation agency, PCT M&E Officer

fertilizer, etc.)	assess the appropriation by farmers			
Percentage of farmers/a using improved agricultural technology (seeds, fertilizer, pest protection, small scale irrigation equipment, etc.) among the targeted beneficiaries	To measure the adoption of project-supported agricultural technologies (disaggregated by female, male, youth)	Annual	Progress reports /External study	Implementation agency, PCT M&E Officer
No of participating farm households using post-harvest technology inputs	To assess the increased market supply of improved post-harvest technologies by private sector and ACCEs as well as increased use	Annually	MAAIF's PCU	MAAIF
Number of farmers reached through ICT innovations	To determine the number of farmers reached through ICT innovations regarding the supply and use of inputs as well as post-harvest and marketing (location of stores, traders) (disaggregated by gender and type of ICT)	Annual	Progress reports	Implementation agency, PCT M&E Officer
Level of satisfaction with ICT initiatives	To assess the relevance and effectiveness of ICT innovations concerning the supply and use of inputs as well as post-harvest and marketing (disaggregated by gender and type of ICT)	Annual	Progress reports, Specific surveys	PCT M&E Officer
Profit-cost ratio for supported commodities (in UGX)	To measure the efficiency of farmers' financial investments	Annual	Progress reports	Implementation agency, PCT M&E Officer

Number of pre-feasibility studies for irrigation schemes completed	number of studies completed	No description provided.	No description provided.	No description provided.
Number of designs for irrigation rehabilitation and expansion schemes completed	number of designs completed and ready for investment	No description provided.	No description provided.	No description provided.
% of ACCEs and apex producer organizations with improved operating capacities	Increase in governance and operating capacities of ACCE and apex producer organizations to deliver services to members for post-harvest and marketing (assessed with scorecard methodology)	Annually	MAAIF's PCU	MAAIF
% increase in volume (MT) of selected commodities marketed by ACCEs in the targeted areas	To measure the extent of market coordination activities of ACEs	Annual	Progress reports	PCT M&E Officer / ACCE
Additional volume of storage capacity established through the project (MT)	To assess the increase of storage capacity (on-farm storage and at community level) in targeted clusters	Annual	Progress reports	PCT M&E Officer / ACE
% of supported ACCEs having significantly invested in post-harvest and/or marketing (more	To assess the increase in post-harvest and marketing capacities of ACCEs/RPOs	Annual	Progress reports	PCT M&E Officer/ACEs

than US\$5,000)				
Number of road bottlenecks fixed	swamp crossings improved, bridges built, culverts built, and other improvements to eliminate bottlenecks on rural access roads	Annually	MAAIF's PCU and clusters	MAAIF
Functional national platform for exchange of market information and negotiation between ACCEs and wholesale traders and agribusiness (# yes)	To assess the sustainable linkage mechanisms between ACCEs and regional wholesale traders and agribusiness industries	Annually	MAAIF's PCU	MAAIF
% of functional committees	To monitor the CMSP, NMSP, and NPSC relevance and performance, reflected in the meetings held	Quarterly	Progress reports	District M&E focal point, PCT M&E Officer
% of district/national technical and financial reports timely and adequate	To monitor the efficiency of the PCT and IEs in monitoring and reporting	Quarterly	Progress reports	District M&E focal point, PCT M&E Officer
3. Percent (%) of result monitoring indicators reported on time as outlined in the M&E plan	To monitor the efficiency of the PCU and Implementation Entities (IE) in monitoring	Annually	MAAIF's PCU	MAAIF
4. Percent (%) of annual audit recommendations implemented	To monitor the efficiency of the PCU and Implementation Entities (IE) in monitoring	Annually	MAAIF's PCU	MAAIF

Annex 2: Detailed Project Description

UGANDA: Agriculture Cluster Development Project (ACDP)

1. The proposed project will support activities designed to raise both productivity and overall production of maize, beans, cassava, rice, and coffee in 12 selected high-potential agricultural areas in Uganda termed “clusters.” The activities and investments to be supported under the proposed project are organized into four components. Component 1 will support activities related to expanding on-farm access to and use of key agricultural inputs as well as on-farm storage.¹³ Component 2 will support: the development of plans for the rehabilitation and expansion of existing small irrigation schemes for rice; the formation of water users’ groups; and the development of a strategy for water management and conservation. Component 3 will support: activities and investments to improve post-harvest handling of the selected commodities and to improve the efficiency of their output markets; and measures to eliminate bottlenecks and trouble spots in rural access roads and market places. Component 4 will support the management of the project. It will also build MAAIF’s capacity to develop, improve, and implement policies and regulatory frameworks for the production and marketing of the five selected commodities. Component 4 will also support the development and operation of an ICT-based Agricultural Information Platform within MAAIF. The components are described in more detail below.

Component 1: Support for Intensification of On-Farm Production (*US\$155 million of which IDA financing of US\$85 million*)

2. The objective of Component 1 is to support the intensification of on-farm production in five priority commodities (maize, cassava, beans, rice, and coffee). Support for the intensification of production of these commodities will be provided to 450,000 selected farm households (approximately 25% of farm households in the project area) located in 12 geographic areas (called clusters) scattered around the country chosen because of their high potential for production of two or more of the specified five commodities. Each of the chosen clusters comprises a grouping of two to three contiguous districts. For eligible farm households, support under this component of ACDP will take the form of: (1) a time-bound, partial and diminishing matching grant to selected farmers to help them finance the purchase of key inputs and on-farm storage (subcomponent 1.1); and (2) targeted training in the most effective use of these same inputs (subcomponent 1.2). ACDP will also provide support (subcomponent 1.3) to MAAIF to strengthen its capacity to collect, analyze, and provide information on agricultural input markets, and to offer capacity-building services to input suppliers.

¹³ Investments in improved capacity for storage are essential for minimizing post-harvest loss and for making possible temporal management of sales at the farm level. Expansion in productivity and production needs to be matched with expansion in storage capacity. Storage capacity is needed at both the farm level and community level. On-farm storage is thought to be an even more binding constraint at present than community-level storage. In ACDP, investment in on-farm storage will be supported through the e-Voucher scheme in Component 1, while investment in community-level storage capacity will be supported under Component 3.

3. *Subcomponent 1.1. e-Voucher Program.* The instrument for providing a time-bound, partial and diminishing matching grant for the purchase of key farm inputs is an e-Voucher. Eligible farm households will receive an e-Voucher that will cover part of the expense involved in the purchase of a group of inputs (fertilizer, seed, on-farm storage, and access to technical and market information through ICT tools, small scale irrigation equipment, including mobile phones). Support from the e-Voucher will be geared to help them to intensify production of one of the prioritized commodities on one acre of their farms. Each farm household will choose the specific combination of inputs to purchase with the-Voucher from a menu of eligible inputs. Farm households will be selected to be eligible for participation in the e-Voucher program from among the membership of farmers cooperatives operating in each cluster (see Annex 3 for more detail on how farm households will be chosen.)

4. Participating households will pay for a portion of the cost of the inputs and use the e-Voucher to pay for the remaining portion. For each participating household, this support will be provided for three consecutive crop cycles. The-Vouchers will have an accumulated value of UGX 450,000 over that period – and the value of the-Voucher will be distributed across the three consecutive crop cycles as indicated in Table A2.1. Through this mechanism, the program will aim to raise the per acre investments in inputs (for one acre per participating farm household) from the current average of UGX 50,000 to UGX 300,000 per season – and in so doing, substantially raise output and income per acre.

Table A2.1. Operation of the e-Voucher scheme for an individual farmer

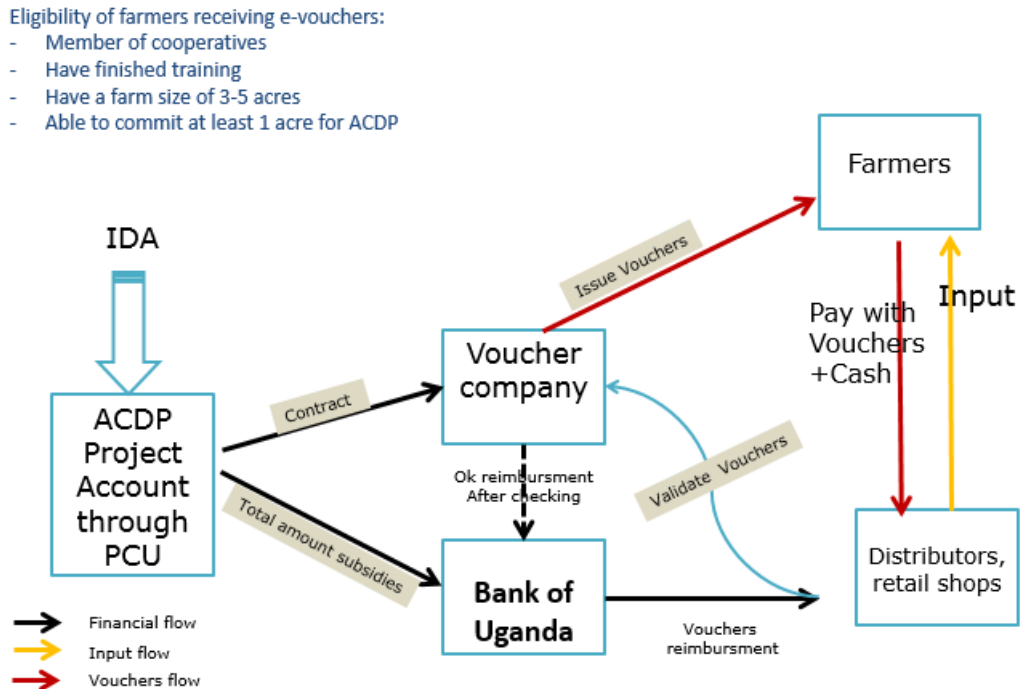
	1st crop cycle	2nd crop cycle	3rd crop cycle
Overall investments (UGX)	300,000	300,000	300,000
Beneficiary contribution (UGX)	100,000	150,000	200,000
Matching grant (UGX)	200,000	150,000	100,000
Matching grant (%)	66	50	33
Expected incremental investment in inputs (UGX)	250,000	250,000	250,000

5. e-Voucher beneficiaries will receive by SMS from e-Voucher operators: expected prices for inputs, local accredited sources of inputs, and technical advice on their commodities (e.g., preferred varieties, fertilizer recommendations). Farmers will present their e-Voucher plus their cash contribution at an accredited input supplier. The validity and value on the e-Voucher will be confirmed via SMS/internet from the e-Voucher operator. The e-Voucher recipient will make his matching cash payment, and the inputs supplier will provide inputs up to the value on the-Voucher plus the cash payment. An e-invoice will be sent to the e-Voucher operator specifying the quantity of inputs purchased, their costs, and the grant value that needs to be recompensed. The funds due to input suppliers will be sent to them directly via Mobile Money. A flowchart of how the e-Voucher program will work is provided in Figure A2.1.

6. The e-voucher will be declining over time as shown on the table A2.1, to facilitate exit strategy. This will make it easier in the first season for the farmers to become involved and gives incentives to re-invest in the inputs.

Figure A2.1: Flowchart for ACDP's e-Voucher program

Flow chart for e-voucher



The Voucher Management Agency (VMA) for the e-Voucher program will generate systematic and transparent reporting on the fund flow, investment in inputs triggered by the project, and sales of promoted inputs by commodity. This market intelligence will be shared with input suppliers and their various associations (UNADA, USTA, FMDC) to generate confidence in the private sector that the project is generating demand and to justify their investments in delivering future inputs, especially in future targeted clusters. One of the responsibilities of the VMA will be to work closely with MAAIF to develop MAAIF's capacity to take on direct management of the implementation of the e-Voucher program.

7. *Subcomponent 1.2. Training for Recipients of e-Voucher Support.* In conjunction with the partial matching grant for the purchase of inputs, the e-Voucher program will also provide focused training in the use of the purchased inputs to ensure their most effective on-farm use. The intent is for participating farm households to be fully aware of improved farm management practices within their control to take full advantage of input usage and post-harvest storage options made available to them under ACDP. Members of farm households eligible for voucher support under ACDP will participate in this targeted and practical training as a prerequisite to receiving the e-Voucher. Two-day training events will provide instruction on a package of inputs (fertilizer, seed, on-farm storage, and access to technical and market information through ICT tools, including mobile phones) tailored to the commodity they are producing. After completing this training, participating farmers will choose the combination of inputs they wish to purchase with the help of the Voucher, and will be given instructions on how to obtain and use the e-Voucher. All participants will be required to participate in a further day of training once they have purchased and used the inputs to ensure that they are fully aware and empowered to follow up on the initial use of the purchased inputs in the most effective manner.

8. **Piloting and Rollout for Subcomponents 1.1 and 1.2.** The e-Voucher and associated training program will be piloted during an initial “year 0.” Year 0 will take place prior to the launch of ACDP, during the period after approval of ACDP by the World Bank’s Board (expected in April 2015) and the approval of ACDP by Uganda’s Parliament and the subsequent initial disbursements (anticipated in April-July 2016). Funding for this initial period of piloting will be sourced from (the restructured) ATAAS. The pilot phase of the e-Voucher scheme will be closely monitored for lessons learned. These will be incorporated into a plan for rollout of the program across all of the clusters. The rollout of the program will proceed as summarized in Figure A2.2.

9. At the Mid-term Review (MTR) for ACDP, an evaluation of the e-Voucher program’s effectiveness will be conducted. At this juncture, consideration will be given to the possibility of expanding the menu of options that the-Voucher could finance. One of the items that will be considered for possible inclusion in the menu is leasing of machinery services for field work on farms.

Figure A2.2: Rollout schedule for ACDP’s e-Voucher program

	Years 0		Year 1		Year 2		Year 3		Year 4		Year 5		Year 6		ICR								
	0.0	0.5	1.0	1.5	2.0	2.5	3.0	3.5	4.0	4.5	5.0	5.5	6.0	6.5									
Piloting of E-Vouchers																							
Preparation in 5 clusters & 5 different commodities									MTR						ICR								
Testing of e-vouchers in 1 districts in each cluster		30,833	Operation of e-voucher Program																				
Project Phasing																							
Expansion of E-Voucher to all 15 districts in the 5 clusters 1 commodity each			61,667	Operation of e-voucher Program																			
Expansion of E-Vouchers to additional commodity in 1st 3 Clusters				46,250	46,250	Operation of e-voucher Program																	
Expansion of E-Vouchers to 3 clusters & 2 commodities each						55,500	55,500	Operation of e-voucher Program															
Expansion of E-Vouchers to 4 clusters & 2 commodities each								74,000	74,000	Operation of e-voucher Program													
Beneficiaries/ year		30,833	107,917	101,750	129,500	74,000	0	0															
Beneficiaries in aggregate		30,833	138,750	240,500	370,000	444,000	444,000	444,000															
Key																							
Planning & Start up Activities																							
Operation of e - voucher program																							
Post Harvest Support for Producer Organizations																							
Project Reviews																							

10. *Subcomponent 1.3. Support for the development of agricultural inputs markets.* This component will support the development of the capacity of the supply side of the agricultural input markets to operate more effectively and to scale up to meet expansion in the demand for agricultural inputs. This support will also include strengthening MAAIF’s capacity to collect, analyze, and provide practical and timely market information to stockists, input suppliers, farmers’ associations, and other participants in the supply side of the input markets. ACDP will also develop and implement a capacity-building program to help these same actors: become more effective and profitable in their activities; and expand their scale of activities to be able to serve the anticipated expansion in demand for inputs.

11. The unit responsible for Agribusiness in MAAIF will lead in the implementation of the sub-component. The Agribusiness Unit will seek the services of a short term TA to

help in the development of the benchmarks for agricultural input markets and will work closely with an agricultural inputs specialist/advisor in the PCU and with the VMA in the formulation and implementation of ACDP work plans for subcomponent 1.3. These will include support to the agricultural input platform that include among others UNADA, USTA, FMDC. The main functions of the Unit will include: (a) establishment of a market intelligence function aimed at enabling suppliers to better anticipate and provide for projected increases in demand for fertilizer, seed, and other inputs; (b) systematic surveys of the number and capacity of inputs producers, sales outlets, and producer organizations providing inputs to farmers so as to assess capacity to deliver expected increases in demand; (c) systematic monitoring and transparent reporting on farmers; efforts under ACDP to bulk their demand for seeds and planting material; (d) capacity-building activities to strengthen the agro-input dealers' distribution network. and their input quality control systems; (e) promotion and facilitation of bulking of demand for imports of adapted fertilizer and agro-chemical supply through public-private partnerships (PPPs); and (f) development and implementation of a program of accreditation (by MAAIF) of input suppliers to become partners in the e-Voucher program. Accredited input suppliers will receive training in: (i) the technology packages of the promoted commodities in their cluster; (ii) the operation of the e-Voucher program; (iii) consequences for farmers and input suppliers of malpractices (i.e., dis-accreditation) and methods used by the project to verify correct use of e-Voucher supported-inputs; and (iv) input price information.

12. **Contracting a VMA for Component 1.** Implementation of the e-Voucher scheme and the supporting training for farmers and capacity building for input suppliers will be quite challenging in the start-up and scale-up stage. MAAIF will contract a VMA to implement these programs.

13. **Benefits of Component 1.** It is anticipated that participating farm households will use at least part of the resulting increases in their incomes to raise the level of investment in inputs for each crop cycle on additional acres – and that they will continue to do this beyond the period of e-Voucher support from ACDP. It is anticipated that by reaching 450,000 farm households with such support, sales of inputs will experience an incremental increase of over US\$12 million in each cluster over the six years of ACDP. This will present significant opportunities to stockists and input distributors. It is further estimated that the rise in production spurred by the use of subsidized inputs under the program will stimulate an incremental rise in farm output in project areas valued at US\$300 million over the six years of the project. This will have a significant effect on farm incomes (this figure represents over US\$650 per participating farm household – likely an underestimate of overall impact of the program on on-farm incomes in that it takes into account only the value of a production gain, not factoring in likely price, quality, and community benefits of this rise in production).

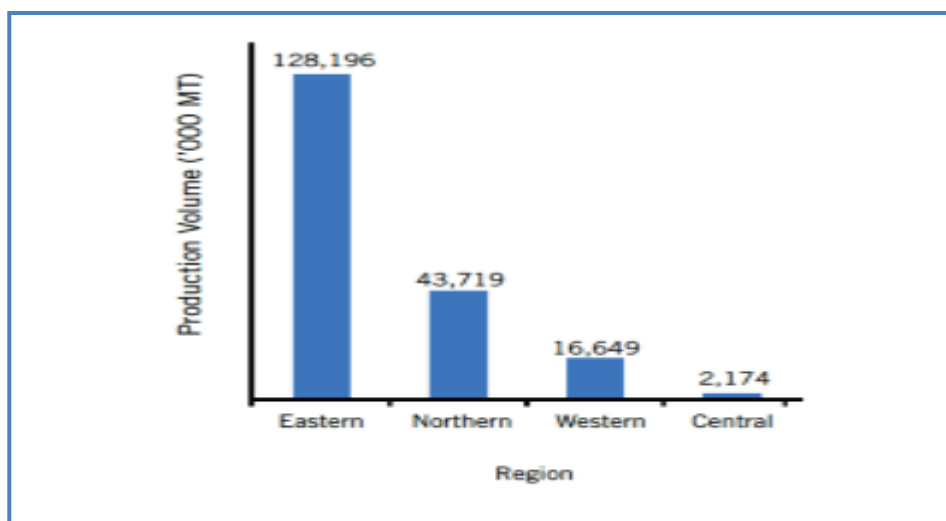
Component 2: Preparation for Agricultural Water Management Investment (*IDA financing of US\$5 million*)

14. The immediate objectives of this component are to: (i) support studies to prepare for irrigation and drainage infrastructure investment in lowland rice paddy settings; (ii) promote sustainable water management practices and infrastructure O&M through support to farmer groups/cooperatives/user associations; and (iii) plan to conserve land and water resource functions within the vicinity of the irrigation schemes and in upstream “hotspots” causing accelerated sediment release. (iv) Strengthening irrigation unit of MAAIF team.

This activity will build on the current experience gained in rice agronomy and the recent MAAIF irrigation rehabilitation in Doho, Agoro Mobuku, and Olweny financed by the AfDB and will provide cluster platforms for the concentration of inputs detailed in Component 1. A key element of this activity is the strengthening of the current irrigation unit in MAAIF and support to the offices of the respective District Coordination Teams (DPOs). MAAIF’s irrigation unit is currently staffed by two civil engineers and four agricultural engineers. It is expected that, under Component 4, this unit will need to be augmented by a social specialist, an environmental specialist, an irrigation agronomist, and four entry-level engineers; at the district level, 10 Engineers will need to be deployed. This core multidisciplinary team will ensure coherent quality control and support district implementation. This unit will be augmented with 10 trainee Engineers at District levels the stage of construction.

15. This component is a priority for Uganda for several reasons. First, there is great potential for expanding rice production. The current structure of domestic rice supply is dominated by rainfed (upland and lowland) rice, which accounts for approximately 85 percent of production. The remaining 15 percent of production is attributed to irrigated rice with significantly higher yields. The adoption of water control combined with soil and water conservation techniques is seen as one way of sustaining the productivity of these important lowlands and setting a model for future rice development. The opportunity cost of not addressing these environmental challenges is considered high and under the National Rice Development Strategy (2008-2018).

Figure A2.3: Production of rice in Uganda by region (2008/09 Production Year)



Source: MAAIF, 2011

16. *Subcomponent 2.1. Preparation of Studies and Designs for Irrigation and Drainage Infrastructure* (including internal and access roads to selected schemes). It is expected that studies will evaluate potential sites in five geographic clusters over 10 districts; cluster 2 (Iganga, Bugiri, and Namutamba), cluster 3 (Pallisa, Tororo, and Butaleja), cluster 5 (Soroti and Serere), cluster 6 (Amuru and Nwoya), cluster 7 (Lira), and cluster 10 (Hoima). The schemes are targeted on the basis of district priorities and spatial concentration with regard to the geographic clusters. The schemes will be subject to an initial screening and subsequent prefeasibility studies for those that meet essential technical, environmental, social, and cost-effectiveness criteria, both in terms of

development and operation and maintenance (O&M) costs. Detailed design of selected schemes is expected to include internal and access road construction over lowland terrain with associated geotechnical risks. In some cases, the plans and designs supported under ACDP could involve the construction of river training works, bunds, and small dams, and the designs for such works should be climate-resilient to the extent that foreseeable extreme rainfall events can be accommodated.

17. **Participatory design and capacity development.** Irrigation scheme designs will be planned through appropriate site feasibility studies under participatory design arrangements. In particular it is expected that the model of joint committees between users, districts, and line agencies that have been established under JICA support to MAAIF will be used by MAAIF during prefeasibility stages to confirm mutually agreeable designs. It is anticipated that plans developed under ACDP would include provision of control options will include diversion weirs from the river, main canals from the weir to the irrigated area, distribution network canals, drainage networks, internal roads, protection dykes, and reinforced drains (in case of flooding risk). Additional costs linked to final earthworks, such as land levelling, intermediate plot bunds and plot drains, etc., will be covered by beneficiaries in kind (about 10 percent of total costs of works). Critical bottlenecks on existing access roads, such as river and swamp crossings, will be identified to allow for all-season traffic with due regard to anticipated impacts of climatic variability. The maintenance of access roads is under district responsibility. In addition, internal and access road design will be “joined up” with the provisions for rural feeder roads in subcomponent 3.2. The environmental and social sustainability will be assessed prior to investment, particularly in relation to existing land tenure and water use arrangements that may be impacted by irrigation development. Investments will be selected according to the highest positive and/or lowest negative environmental and social impacts. Operational training to water users’ groups will be essential in anticipation of the investments; this is expected to include:

- On-farm control of inflows at canal outlets will include training in modular outlet operation and monitoring.
- On-farm water application: land levelling and contouring to maintain desired submergence levels and uniform soil moisture profiles will be combined with training on water management for specific rice varieties, including standard IRRI Alternate-Wet-Dry techniques where water and drainage control is possible together with deep (pelletized) fertilizer emplacement.
- On-farm control of return to field drains will be demonstrated to minimize waterlogging and salinization of affected soils, thereby reducing the volumes of nonbeneficial evaporation on irrigated land.

Technical readiness for investment. Candidate irrigation sites within the geographic clusters indicated in Annex 8 have been targeted on the basis of district-level agricultural priorities. Initial selection criteria included: (i) market access; (ii) stakeholder interest; and (iii) proximity to market and district roads. These schemes are to be carefully screened and prioritized before proceeding with prefeasibility studies and designs. The project will start with schemes meeting the selection criteria where prefeasibility studies can be advanced quickly. For example, Bwirya and Lwoba in Butaleja District, where about 900 ha are currently cultivated by private out-growers, have already been identified: design is expected to include a protection dyke against flooding of the Manafwa River. Prefeasibility studies will identify lowland water control measures including detailed cost estimates, rates of return, and the assessment of environmental and social impacts. In

addition the schemes will need to be factored into the relevant CMPs being drawn up by the Ministry of Water and Environment (MWE) with the support of the Water Resources Management and Development Project (WMDP-P123204). Where these are not in place, the plans shall be developed under ACDP. Proposed schemes will be ranked according to the extent to which they satisfy the selection criteria and the degree to which they are in conformance with the CMPs. Detailed feasibility and participatory design studies will be conducted for priority schemes in year 1 followed by studies for the remaining schemes in year 3. The responsibility for O&M of these public assets will be governed by a performance contract model drawn up by MWE, MAAIF, and respective District Councils. At the MTR for ACDP, the findings of the feasibility studies and designs will be reviewed. At that time, and as a follow-on to the review of these studies, a discussion will be convened to consider options for financing investment in schemes for which the feasibility studies indicate that the proposed investments are viable, with acceptable rates of return.

18. *Subcomponent 2.2. Formation and Training of Water Users' Groups.* The project will facilitate the creation and registration of dedicated water users' groups for schemes taken to detailed design. At present such groups are recognized under the Cooperative Societies Act and known as Scheme Cooperative Societies (SCS) in the model performance and management contracts drawn up to govern their relationship with District Councils and MWE/MAAIF. This activity will strengthen water users' groups where cooperatives are already in place. MAAIF and the respective districts will assist in the formal registration, preparation, and adoption of internal rules and regulations and election of members. Capacity building will include training in: (i) water management and maintenance; (ii) environmental sustainability, catchment management, and climate resilience; and (iii) management and administration of the water users' groups. District staff will be trained in providing active support to water users' groups. O&M guidelines will be prepared in appropriate local languages.

19. *Subcomponent 2.3. Integrated Soil and Water Conservation/Management (Including Watershed Protection) for Irrigation Areas and Associated Buffer Zones.* To conserve the functionality of wetlands and surrounding buffer zones impacted by irrigation development, the project will support advocacy, awareness building, and training through which a set of soil and water conservation interventions will be promoted to maintain ecosystem functions, flood regulation, sediment control, and drainage across the irrigated areas. These are expected to include maintenance of cross-drainage on bunds and access roads, embankment slope stability protection and re-vegetation, planting of shade trees, and protection of aquatic ecosystem niches. In addition, a set of conservation measures will be planned across adjoining buffer zones to mitigate soil erosion. These will include standard soil conservation measures combined with livestock fencing where necessary. It is anticipated that traditional crop diversity in non-paddy areas will be protected and promoted where necessary to maintain the nutritional status of local communities.

20. Watershed management aspects will benefit from the World Bank-assisted WMDP (P123204), whose implementation has just started. In areas not covered by WMDP, watershed management needs will be identified during prefeasibility studies and incorporated into the project design. In addition, community wetland management plans shall be developed under the provisions of National Environment Regulations for wetlands, riverbanks, and lakeshore management. This activity is designed to enhance the sustainability of the lowlands gravity irrigation schemes through sound management practices across the irrigated perimeters and associated watersheds.

Component 3: Market Linkages, Post-harvest Handling, Storage, and Value Addition
(US\$73 million of which IDA financing of US\$45 million)

21. This component will support activities and investments to improve marketing and post-harvest handling of farm produce and will also support measures to eliminate bottlenecks and trouble spots in rural access roads critical for the movement of farm produce to market. These activities will enable the increased production stimulated by the e-Voucher scheme in Component 1 to find profitable market opportunity. Commissioned studies have demonstrated strong market prospects for rice, cassava, beans, and maize in the internal institutional market as well as into selective regional markets. During the initial two years of the project, activities under this component will support measures to develop improved market linkages, market access, and the provision of market intelligence for farmers, producer organizations, and the trader network. Support and TA will also be provided to farm cooperatives and farmers' associations at local levels to strengthen their capacity to manage their business enterprises effectively, to scale up their operations, and to improve their profitability. This will include support to these cooperatives and associations for the development of clear and effective business plans. Beginning in year 3 of the project, this Component will also provide matching grant support to qualifying farmers' cooperatives and associations for investments in community-level facilities for commodity storage, processing, and other post-harvest handling functions (*subcomponent 3.3*).

22. *Subcomponent 3.1. Market Knowledge and Intelligence for the Selected Commodities.* As part of preparation for ACDP, market opportunity studies were carried out for maize, beans, cassava, and rice. These demonstrated that with a population increase of 3.43 percent per annum, Uganda's population will approach 45 million by 2020, and that with projected GDP growth between 5-7 percent per annum, there will be strong demand for all food items, staple crops included, making productivity increase an imperative for Uganda's staple crops. For the four staple crops, the studies concluded that: (i) domestic demand is strong and increasing for rice in Uganda, especially amongst the rapidly expanding urban population, yet Uganda is still largely dependent on imports to meet the existing demand; (ii) the major internal market for both maize and beans is institutions (e.g., schools, prisons, hospitals, army, etc.), suggesting the value of producer organizations developing off take agreements with specialist suppliers; (iii) both maize and beans have significant and relatively secure export markets regionally, provided quality and supply competitiveness, especially for maize, can be improved; and (iv) for cassava the opportunities are more limited but are likely to focus on value-added activities in chipping and drying. The studies emphasized the need for strengthened existing farmers' organizations and for the emergence of new, more business-focused farmers' organizations as the key platform for a more efficient product supply and distribution system. The findings provide a foundation for marketing training, identifying trading partners, market sizes, pricing patterns, and quality standards; and the national apex organization as a platform for exchange of market information and negotiation of contracts between ACCEs and regional wholesale traders and agro-industries.

23. Under *this component*, MAAIF will work with ACCEs and RPOs to help them become more effective in marketing their local producers' farm produce. This will include measures to strengthen their linkages with regional and international markets as well as with domestic buyers for their product. It will also include helping them to: (i) make use of the Uganda Commodity Exchange; and (ii) develop more advantageous agribusiness agreements and networking connections with potential buyers of their products – including

exporters but also institutional and private sector buyers internally. This will be done, in part, through marketing training for marketing managers from ACCEs, RPOs, and the private sector in the clusters. This will cover, *inter alia*, the following: (i) dissemination of findings of market surveys (including those carried out in conjunction with the preparation of ACDP for maize, cassava, beans, and rice); (ii) provision of a database of potential buyers; (iii) quality standards and post-harvest technologies to deliver quality; (iv) use of online applications (including apps to be designed under Component 4) designed to link sellers of farm product with interested buyers; and (v) the operation and services to be provided by the apex markets information center. This will also be done through “buyer-seller meets” – specially orchestrated events at which farmers, ACCEs, and RPOs are brought together with potential buyers of their products.

24. *Subcomponent 3.2. Farm Access Roads at Community Level.* Under this subcomponent, ACDP will provide support to each cluster to make improvements in existing farm access roads. Such improvements will be focused on elimination of key choke points that regularly impede the inflow and outflow of commodities from farms and rural communities. Such choke points include, *inter alia*, stretches of road in swampy areas that are low and regularly too muddy to traverse and bridges that are impassable for trucks or that are more generally in need of repair. Under this subcomponent, ACDP will allocate a budget for each cluster to support relatively small works to make selected roads passable. For each cluster, MAAIF will work with District Local Government Works Departments and other locally based stakeholders in carrying out assessments to provide a basis for identifying and prioritizing roads to receive improvements. Decisions on the works to be undertaken will be discussed and agreed upon at stakeholder meetings at the cluster level. These cluster-level decisions will be communicated to the ACDP PCU. Accordingly, the implementation of plans and works identified at the cluster level will be contracted by MAAIF using standard GoU procedures for such activities. MAAIF and relevant District Councils will oversee the contracted works and services for each respective district.

25. *Subcomponent 3.3. ACCE-level Warehousing, Value addition, and Marketing.* Subcomponent 3.3’s objectives are: to strengthen the capacity of farmers’ cooperatives and associations to manage their business enterprises effectively; to scale up their operations; and to improve their profitability. This will include capacity building for apex farmers’ associations at national level (*Activity 3.3(a)*), capacity building for local farmers’ associations at local level (*sActivity3.3(b)*), and matching grants to assist local farmers’ associations to invest in facilities for post-harvest handling, warehousing and storage, and value-adding processing of farm product (*Activity3.3(c)*).

26. Under *Activity 3.3(a)*, MAAIF will provide capacity building for apex farmers’ organizations at the national level (such as Uganda Farmers Federation) to strengthen their abilities to support the development of their local members and affiliates – farmers’ cooperatives and farmers’ associations at local levels. The types of capacity-building support provided to these national organizations will be focused on strengthening their abilities to operate effectively in a variety of areas including, *inter alia*:

27. Sub-activities a(i) collection, analysis, and sharing of information about national and regional agricultural markets; (ii) bulking of demand for and provision of inputs; (iii) measures to become attractive customers of financial institutions to gain greater access to short- and long-term credit; (iv) access to linkages with regional markets and agro industries; (iv) provision of training on cooperative management; (v) lobbying and advocacy on behalf of farmers and agribusiness; (vi) provision of technical expertise,

backup, and training to local members and affiliates as well as other private sector actors in areas such as governance, operation of warehouses and other equipment, risk management, soil management and fertility, quality management and assurance, etc.; (vii) undertaking institutional and financial auditing of ACCEs; (viii) provision of warehouse inspections to reduce post-harvest losses; (ix) development of effective business plans and strategic plans for their own activities; and (x) effective programming, implementation, and internal monitoring of selected aspects of ACDP activities.

28. Under *Activity 3.3 (b)*, MAAIF will provide systematic capacity building and institutional development and mentoring for farmers' organizations at the local level. The focus will be on enhancing local organizations' ability to more effectively manage their core businesses. Support will be provided in a variety of areas including, *inter alia*: input and output bulking; value addition; marketing of farm produce; and provision of other services to their members. A standard package of training modules combined with mentoring will be used to strengthen the governance and operational capacities of about 300 ACCEs, including their institutional, technical, and marketing capacities. The institutional support package will include among others: sub-activities (b)(i) training on good cooperative management; (ii) internal and external financial audits; (iii) training on entrepreneurship, financial literacy, and bookkeeping; (iv) mentoring in cooperative management, and registration; and (v) sensitization on core values, including gender, nutrition, and environmental and social impact awareness. Technical training will include: (i) business plan development; (ii) marketing; (iii) bulking and storage techniques; and (iv) credit management.

29. Under *subcomponent 3.3(c)*, the project will support investments of locally based farm cooperatives and associations in community-level post-harvest handling, grading, bulking and storage, and processing for value addition. The mechanism for this support will be a matching grant to finance two-thirds of the cost of the purchase of equipment and facilities (and TA if needed) needed to scale up and improve the effectiveness with which the ACCEs are able to carry out these functions. Matching grants to individual ACCEs will have a ceiling of US\$75,000.

30. ACCEs will be eligible to receive such a matching grant on the basis of: sub-activities (c)(i) demonstrating satisfactory managerial capacity (as measured through a managerial capacity index); (ii) successful management of the e-Voucher scheme with members (evidenced by corresponding increases in production by members, and no evidence of malpractice or misuse of the e-Vouchers among members); and (iii) proposals for matching grants which form part of a strong business plan for the ACCE and are successful in receiving endorsement from its respective cluster; and (iv) evidence of ability and commitment to finance one-third of the cost of the purchase with own funds. Proposals will be reviewed by the clusters. Each cluster will be permitted to endorse proposals that collectively add up to a designated ceiling of financing per cluster per year. Proposals endorsed by the clusters will be reviewed and approved on a competitive basis by a matching grant committee at the ACDP PCU. Table A2.2 is a non-exhaustive listing of types of investment eligible for support under ACDP matching grants.

Table A2.2: Types of equipment/facilities for which matching grant support will be available

Commodity	Investment type
Maize and beans	Moisture meters, scales, cribs (est. 20 MT at US\$3,000), stores (est. at US\$200/MT), pallets, shellers (est. US\$1,400), threshers (beans), tarpaulins, drying floors, grading tables, bagging and packing equipment, storage

	systems and facilities
Rice	Threshers and items listed above
Coffee	Pulpers, wet processors, dryers, and storage facilities
Cassava	Chippers, dryers, and value-added equipment

31. **Training and technical support to local-level ACCEs and other market actors under subcomponents 3.1, 3.3(b), and 3.3(c)** will be provided under contract to the PCU by apex farmers' organizations (such as the regional teams of UCA and other third-level farmers' organizations), with technical support, as required, provided by contracted agencies. ToRs for this work, as well as training curricula and materials, will be developed by MAAIF (with assistance from consultants, including the national apex organizations, as needed).

32. Training and technical support to national-level apex farmers' organizations under subcomponent 3.3(b) will be provided by MAAIF (with the support of consultants, as needed).

33. **The matching grant program under subcomponent 3.3(c) will be managed by the ACDP PCU.** The PCU together with contracted national-level apex farmers' organizations will provide TA to eligible ACCEs as needed to help them with the formulation of proposals. Cluster committees will review proposals annually and endorse a group of proposals (totaling to no more than an assigned per-cluster ceiling) for consideration on a competitive basis by the matching grant committee of the ACDP PCU.

Component 4: Project Management, Policy, Regulatory, and ICT functions of MAAIF (IDA financing of US\$15 million).

34. The aim of this component is to: (i) ensure project management and coordination; (ii) strengthen MAAIF's effectiveness in carrying out its role with respect to policy and regulatory regimes affecting agricultural input and output markets; and (iii) develop and implement an ICT-based *Agricultural Information Platform* to enable effective real-time coordination and management of information at every level (and to support the implementation of the e-Voucher program).

35. *Subcomponent 4.1. Project Management and Coordination at National, Cluster, and District Level.* The overall responsible authority for ACDP will be the PS of MAAIF on behalf of the GoU. Planning and coordination of ACDP will take place at both national and cluster levels, with multi-stakeholder (public, producers, and private sector) representation at each level, while implementation will be done at national and district levels.

36. **A Project Coordination Unit (PCU)** will be established within MAAIF to provide overall coordination of the project. This will include responsibility for technical leadership and coordination as well as for administrative, bureaucratic, safeguard, and fiduciary-related aspects of project management. The PCU will report to the Task Manager. The PCU will coordinate with MAAIF's technical and administrative directorates in every aspect of ACDP implementation. MAAIF will also be responsible for administrative and fiduciary aspects of ACDP management as well as for managing the M&E function for the project. The PCU will have a number of technical as well as administrative positions, including the following: Project Manager; e-Voucher Advisor; e-Voucher Coordinator; Procurement Specialist; Procurement Assistant; Financial Management Specialist; Financial Management Assistant; Monitoring and Evaluation Specialist; Monitoring and Evaluation Assistant; Farmers' Organizations Specialist; Road Engineer; Water Engineer;

Agronomist; Social Scientist; Environmental Specialist; and Advisor. The project will support the PCU by financing its operational costs, staffing, individual consultants, contracts with firms to implement aspects of all four components (including, *inter alia*, firms and organizations to implement: the e-Voucher system and associated training under Component 1; firms to carry out prefeasibility and feasibility studies and designs under Component 2; and apex farmer organizations to carry out capacity building under Component 3), studies and dissemination of their findings, matching grants under Components 1 and 3, M&E-related activity, reporting, planning, and consultations and conferences.

37. **A National Project Steering Committee (NPSC).** Because of the broad nature of the proposed project, an overall steering committee will be formed with representation by a broad range of stakeholders to provide overall oversight and guidance to the project. This NPSC will be chaired by the PS of MAAIF, with representation from key stakeholders including the Private Sector Foundation (PSF), the Ministry of Finance, Planning and Economic Development (MoFPED), the Ministry of Water and Environment (MWE), the Ministry of Local Government, the Ministry of Works and Transport (MoWT), Ministry of Trade, Industry and Cooperatives (MTIC), and the Ministry of Gender, Labor and Social Development (MoGLS), representatives of at least two district local governments, and representatives of farmers' organizations. The NPSC will meet regularly twice per year, and at other times as needed, to provide guidance on the overall direction of ACDP implementation.

38. **Cluster Multi-Stakeholder Platforms (CMSP).** ACDP will support the establishment and operations of CMSPs in participating clusters of districts. These CMSPs will bring together key value chain actors in the relevant commodity production area (cluster – or group of districts) and LG representatives from districts within each cluster. The CMSP will ensure that gender-responsive programming and priority setting of ACDP-implemented activities are done at cluster level and from a commodity value chain perspective. It will provide a forum for planning, dialogue, and participatory priority setting among the stakeholders and forge a common way forward to develop the selected commodities in the clusters in an integrated manner. Each CMSP will comprise representatives from the involved districts, farmers' organizations, and relevant private sector concerns. Each district authority will be represented by the following: the Local Council V,¹⁴ the Chief Administrative Officer (CAO), and the District Production Officer (DPO). Farmers' organizations and the private sector should together constitute the majority of the CMSP and the chair selected from among these stakeholder groups to ensure that value chain perspectives guide decision making. The secretariat function of the CMSP will be provided by one of the participating districts on a rotational basis. A Memorandum of Understanding (MoU) between the cluster member districts and MAAIF will be required as authority (decision power) is transferred to the CMSP in regard to priority setting of project investment within the cluster. MAAIF will draft the MoU and discuss it with relevant stakeholders in the involved districts. As a first step in project

¹⁴ Five levels of Local Councils exist in Uganda. The lowest level is the Local Council I (LC 1 or LC I), responsible for a village or, in the case of towns or cities, a neighborhood. The area covered by Local Councils II through IV incorporate several of the next lowest levels, while a Local Council V (LC 5 or LC V) is responsible for the entire district.

implementation, a series of training workshops will be held by the PCU in the respective clusters, bringing together the key government staff as well as key stakeholder representatives to ensure that the role of the clusters and the procedures they follow are well understood. (edit composition)

39. *Subcomponent 4.2. Capacity Building for Policy and Regulatory Functions of MAAIF.* This Subcomponent will be the responsibility of MAAIF's Department of Crop Inspection and Certification (DCI&C). The project will support activities to increase MAAIF's effectiveness in carrying out its role with respect to policy and regulatory regimes affecting agricultural input and output markets. ACDP will provide support for activities related to strengthening regulatory frameworks, including: (i) updating the 2006 Seed Act and associated regulations to make them consistent with the EAC harmonization protocols; (ii) developing guidelines and procedures for inspection and certification of vegetative planting materials; (iii) developing plant variety protection regulations to promote private investment in genetic improvement; and (iv) developing plans for strengthening MAAIF's inspectorate department to effectively review and implement several laws¹⁵ and regulations, including: (a) developing regulations to govern quality assurance and certification for planting materials, including pest and disease control and plant quarantine; and (b) developing standards manufacturing, processing, and handling, registration, quality assurance, handling and safe use of agro-chemicals and safe labor-saving technologies.

40. **Phytopathological and Quarantine Services.** ACDP will support activities to strengthen the capacities of the Phytopathological and Quarantine Services (PQS) in the Department of Crop Inspection and Certification to deal with quarantined pests and diseases, quality assurance of seed imports and exports in accordance with national, regional, and international guidelines and protocols.

41. **Seeds and planting materials Quality Assurance.** The operational capacity of the National Seed Certification Service (NSCS) will be strengthened and rationalized¹⁶ to move towards a semi-autonomous and self-sustaining institution, complying with International Seed Testing Association (ISTA) and OECD accreditation (seed quality certification including for export).

42. Furthermore, innovative mechanisms for quality assurance of noncommercial food crop seeds need to be developed, including delegated authority for supervision of seed production at the district (crop SMS) and/or ZARDI (Zonal Agricultural Research and Development Institutes) level. Seeds to be marketed must be subject to random sampling and testing for quality and viability (germination, moisture content, and purity) and assigned the designated marketing label. Seeds meant for the regional markets must undergo ISTA testing and certification.

¹⁵ In particular, the laws referred to above include: the Plant Protection and Health of 2015, the Seeds and Plants Act of 2006, the Agricultural Chemical Controls Act of 2006, and the Plant Variety Protection Act of 2014.

¹⁶ A gradual evolution towards the Kenyan model developed by KEPHIS has been mentioned as desirable by several public and private seed sector stakeholders. See also non-ATAAS DSIP technical documents on seeds.

43. **Pesticide regulatory framework** In line with the Agricultural Chemicals Control Act (2006) and international guidelines and conventions,¹⁷ Uganda will develop its regulations for pesticide registration and control, including for application equipment. On this basis, the registration of pesticides, dealers, and premises that handle pesticides will be registered and imports/exports of pesticides controlled. Surveillance to enforce that products conform to standards will be upgraded by inspector training, the updating of inspection guidelines and manuals, establishment of analytical facilities, and implementation of a pesticide residue monitoring plan. Finally, the project will contribute to create awareness of professionals and the greater public on safe use, handling, and disposal of pesticides, including support to a pesticide poison information facility, in line with the Pest Management Plan. Standards, notifications of inappropriate pesticide use and all guidelines for using pesticides will be posted on the information platform, with an interactive functionality to guide potential users.

44. **Fertilizer and agricultural inputs quality control.** In accordance with the Agricultural Chemicals (Control) Act (2006), the project will support the Agricultural Chemicals Board through the Secretariat, DCP, to develop guidelines for fertilizer handling and use and the control of fertilizer quality (protocol, laboratory). The National Fertilizer Policy and Legal Framework have been finalized and the process of developing the Fertilizer Strategy is in progress. The project will support operationalization of the Legal Framework through the Fertilizer Strategy. The capacities for spot inspections and analysis at all levels along the fertilizer marketing chain will be strengthened and quality assurance laboratories, both at entry points (mini-labs) and referral (National laboratory at Namalere), will be operationalized to test the quality of marketed products.

45. **Sustainable and safe labor-saving technologies.** The project would finance costs associated with the development of a strategy for MAAIF's activities in the areas of: investments in the development of sustainable farm mechanization; development of agricultural engineering capacities within MAAIF's agricultural mechanization unit; development and implementation of leasing regulations for agricultural equipment (in collaboration with IFC); and development of regulations for the quality of agricultural equipment and for the safe use of mechanization in agricultural production and post-harvest operations and value addition. Technical support will be provided to stakeholders to pilot activities in sustainable land preparation, conservation agriculture, and on-farm postharvest and value-addition technologies.

46. **Leasing law.** ACDP should rely on the output of the complementary Uganda Leasing Project (ULeP) pursued jointly by IFC and WB to develop a leasing law, promote leasing among stakeholders and facilitate private investment in the industry. The innovative leasing products developed under ULeP should be piloted during the implementation of ACDP.

47. **Warehouse receipt system.** A warehouse receipt policy is needed for the country to clearly define the specific roles of stakeholders along the commodity trading value chain (individual farmers, ACCEs, private traders, collateral managers, government, etc.). Based

¹⁷ FAO Code of Conduct on use and distribution of Pesticides; the Basel Convention on Trans-boundary Movement of Hazardous Wastes; the Stockholm Convention on Persistent Organic Pollutants (POPs); and the Codex Alimentarius (FAO).

on the policy, the existing warehouse receipt law may need to be revised to ensure that it adequately supports structured trading and in particular does not undermine collateral management. The structure of the warehousing receipt system needs to be better articulated to avoid conflict of interest in the collateral management system.

48. To achieve the above, ACDP will provide support to MAAIF's Directorate of Crop Resources (DCR) and its Agribusiness Unit. This will include supporting operational costs, staffing, consultants, studies and dissemination of their findings, advocacy activities, and consultations and conferences.

49. *Subcomponent 4.3. Developing an ICT-based Agricultural Information Platform for MAAIF.* This Subcomponent will be the responsibility of the MAAIF's Department of Agricultural Planning. Under ACDP, support will be provided for the Agricultural Information Platform within MAAIF's Agricultural Resource Centre. The Agricultural Information Platform is intended to provide MAAIF with the ability to: capture data from ongoing programs and projects using electronic devices connected to mobile networks; upload information from manually collected data; and geospatially aggregate the data from local, regional, or national levels including agricultural statistics. The platform will enable email, file sharing, and creation of dashboards and provide benefits to M&E functions. The Agricultural Information Platform will also support the development and implementation of new ICT tools and information knowledge management assistance to MAAIF and TA to farmers to help them: (i) have better access to practical information, knowledge, and technical advice to improve farm management and farming practices; (ii) provide feedback and information to their advisors and program officers; (iii) find and establish marketing linkages with input suppliers and output purchasers; and (iv) participate in an e-Voucher scheme.

50. A firm will be contracted by MAAIF through the PCU to help the staff of the Agricultural Resource Centre establish and operate the Agricultural Information Platform. The project will support: (i) contracting of the firm; (ii) training for Agricultural Resource Centre staff; (iii) development and implementation of the Agricultural Information Platform (in conjunction with an agricultural market information system being developed under a separate trust-funded initiative) for MAAIF; (iv) equipment and training of agricultural advisors in selected areas with ICT tools and methodologies with which to provide greater access by farmers to information and networks relevant to farm management and practice; and (v) administrative and recurring costs involved in keeping the system operational.

The Republic of Uganda
Agriculture Cluster Development Project (ACDP)
Components by Financiers
(US\$)

	IDA		Beneficiaries		GoU		Total	
	Amount	%	Amount	%	Amount	%	Amount	%
A. Support for Intensification of On-Farm Production								
1. e-Voucher Program	79,000,000	53	70,000,000	47%	0	-	159,000,000	64%
2. Training for Recipients of e-Voucher Support	5,000,000	100	-	0%	0	-	5,000,000	2%
3. Support for Supply of Agricultural Input Markets	1,000,000	100	-	0%	0	-	1,000,000	0%
Subtotal Support for Intensification of On-Farm Production	85,000,000	55	70,000,000	45%	0	-	165,000,000	67%
B. Preparation for Agricultural Water Management Investment								
1. Feasibility studies and design of irrigation infrastructure	3,311,438	100	-	0%	0	-	3,311,438	1%
2. Water Use Management and Infrastructure Maintenance Training	688,562	100	-	0%	0	-	688,562	0%
3. Integrated Soil and Water Conservation	1,000,000	100	-	0%	-	-	1,000,000	0%
Subtotal Preparation of Agricultural Water Management Investment	5,000,000	100	-	0%	0	-	5,000,000	2%
C. Market Linkages, Post-Harvest Handling, Storage, and Value Addition								
1. Marketing Knowledge and Intelligence for Selected Commodities	1,000,000	100	-	0%	0	-	1,000,000	0%
2. Farm Access Roads at Community Level	16,000,000	100	-	0%	0	-	16,000,000	6%
3. ACCE-level Value Addition and Marketing	28,000,000	50	28,000,000	50%	0	-	46,000,000	19%
Subtotal Market Linkages, Post-Harvest Handling, Storage and Value Addition	45,000,000	62	28,000,000	38%	0	-	63,000,000	25%
D. Project Management, Policy, Regulatory, and ICT Functions of MAAIF								
1. Project Coordination (incl. M&E) and Coordination at National, Cluster and District Levels	9,000,000	100	-	0%	0	-	9,000,000	4%
2. Capacity Building for Policy and	3,000,000	100	-	0%	0	-	3,000,000	1%

Regulatory Functions of MAAIF								
3. ICT-based Agricultural Information Platform for MAAIF	3,000,000	100	-	0%	0	-	3,000,000	1%
Subtotal Project Management, Policy, Regulatory, and ICT Functions of MAAIF	15,000,000	100	-	0%	0	-	15,000,000	6%
Total PROJECT COSTS	150,000,000	60	98,000,000	40	0	-	248,000,000	100%

The Republic of Uganda
Agriculture Cluster Development Project (ACDP)
Components Project Cost Summary

	(US\$'000)			% Foreign Exchange	% Total Base Costs
	Local	Foreign	Total		
A. Support for Intensification of On-Farm Production					
1. e-Voucher Program	47,700	101,300	149,000	68	60
2. Training for Recipients of e-Voucher Support	3,950	1,050	5,000	21	1
3. Support for Supply of Agricultural Input Markets	820	180	1,000	18	4
Subtotal Support for Intensification of On-Farm Production	52,470	102,530	155,000	66	63
B. Preparation for Agricultural Water Management Investment					
1. Irrigation and Drainage Infrastructure Planning(Tally) strengthening MAAIF irrigation unit	2,682	629	3,311	19	3
2. Water Use Management and Infrastructure Maintenance Training for Irrigation Schemes	544	145	689	21	-
3. Integrated Soil and Water Conservation /	850	150	1,000	15	2
Subtotal Preparation of Agricultural Water Management Investment	4,076	924	5,000	15	5
C. Market Linkages, Post-Harvest Handling, Storage, and Value Addition					
1. Marketing Knowledge and Intelligence for Selected Commodities	850	150	1,000	15	-
2. Farm Access Roads at Community Level	11,200	2,800	14,000	20	10
3. ACCE-level Value Addition and Marketing	36,960	21,040	58,000	36	23
Subtotal Market Linkages, Post-Harvest Handling, Storage, and Value Addition	49,010	23,990	73,000	33	29
D. Project Management, Policy, Regulatory, and ICT Functions of MAAIF					
1. Project Coordination, Monitoring and Evaluation	7,470	1,530	9,000	17	6
2. Capacity Building for Policy and Regulatory Functions of MAAIF	1,680	320	2,000	16	3
3. Developing an ICT-based Agricultural Information Platform for MAAIF	3,400	600	4,000	15	2
Subtotal Project Management, Policy, Regulatory, and ICT Functions of MAAIF	12,550	2,450	15,000	17	11
Total BASELINE COSTS	118,106	129,894	248,000	52	100
Physical Contingencies	-	-	-	19	1
Price Contingencies	-	-	-	34	12
Total PROJECT COSTS	118,106	129,894	248,000	50	113

Annex 3: Implementation Arrangements

UGANDA: Agriculture Cluster Development Project (ACDP)

A. Project Institutional and Implementation Arrangements

1. **The overall responsible authority for ACDP will be the PS of MAAIF on behalf of the GoU.** A National Project Steering Committee (NPSC) will oversee MAAIF. ACDP planning and coordination will take place at the national and cluster level. Multistakeholder representation at each level will have the authority to submit proposals for ministerial approval and to guide implementation. Actual implementation will be done at the national and district level, except for the data capture during M&E surveys, which will be at the farm level.

2. **Project management mechanisms at national level.** The Project Steering Committee chaired by the PS MAAIF, will represent all key stake holders and will be responsible for providing policy and strategic guidance. This committee will also be responsible for providing the mechanism to ensure that the project activities are implemented in accordance with agreed work plans, to the highest standards, and that activities are appropriately phased and coordinated. The Committee will meet every quarter or more often as and when there is need. The composition of the project steering committee will include among others: the Private Sector Foundation (PSF); farmers' organizations/cooperatives; and public institutions at the PS level such as the Ministry of Finance, Planning and Economic Development (MoFPED), Ministry of Water and Environment (MWE), Ministry of Local Government (MoLG), Ministry of Works and Transport (MoWT), Ministry of Trade, Industry and Cooperatives (MTIC), Minister of Gender, Labour and Social Development (MoGLS), and the Ministry of ICT.

3. **Project coordination mechanisms at national level.** Project implementation will be fully integrated into respective departments in MAAF in order to ensure capacity development and sustainability. Consequently, a Project Coordination Unit (PCU), headed by a Project Coordinator (PC) will be established within MAAIF. The PC will report to the Task Manager who will be a senior officer designated by MAAIF and accountable to the Permanent Secretary to take overall responsibility for the project. The staff of the PCU will be physically situated within relevant departments of MAAIF and will integrate fully their activities with those of their respective departments. These staff may be either recruited directly as project staff or designated internally through civil service processes. These staff will operate under terms-of-reference which indicate the extent to which they are dedicated to ACDP activities. It is anticipated that the PCU Coordinator, and likely other PCU staff as well, will be dedicated full-time to ACDP. The PCU will liaise with other departments, Local Governments (LG), and other ministries. Its key function is to facilitate smooth project implementation and work on regional trade issues and opportunities, regulatory frameworks, and core project risks. The PCU will coordinate with MAAIF's technical and administrative departments in every aspect of ACDP implementation. MAAIF will also be responsible for administrative and fiduciary aspects of ACDP management as well as for managing the M&E function for the project.

4. **Key MAAIF Staff involved in the management of ACDP and its PCU.** The PCU will be integrated within, and will support, MAAIF's management of the project. Important staffing roles will include:

(a) **Task Manager, a senior official designated by the PS MAAIF** will have the overall responsibility for coordinating the management of the project. A Project Coordination Unit (PCU) will work closely with the Task Manager and Component Managers to ensure overall project implementation.

(b) **The Component Managers** will be responsible for managing the components. This will involve detailed planning, procurement (with the support of PCU), coordination of the implementation of activities and delivery of expected results under their components. They will utilize wherever possible the existing management/stakeholder coordination structures. Project Coordinator will work closely Component Manager(s) in managing respective components.

(c) **Project Technical Committee** will provide a forum for dialogue with stakeholders under the different components. The project Technical Committee will be chaired by the Task Manager, while the Project Coordinator will be the secretariat. The TORs for this committee will be determined by the Project Steering Committee. The Committee will meet at least once in a quarter

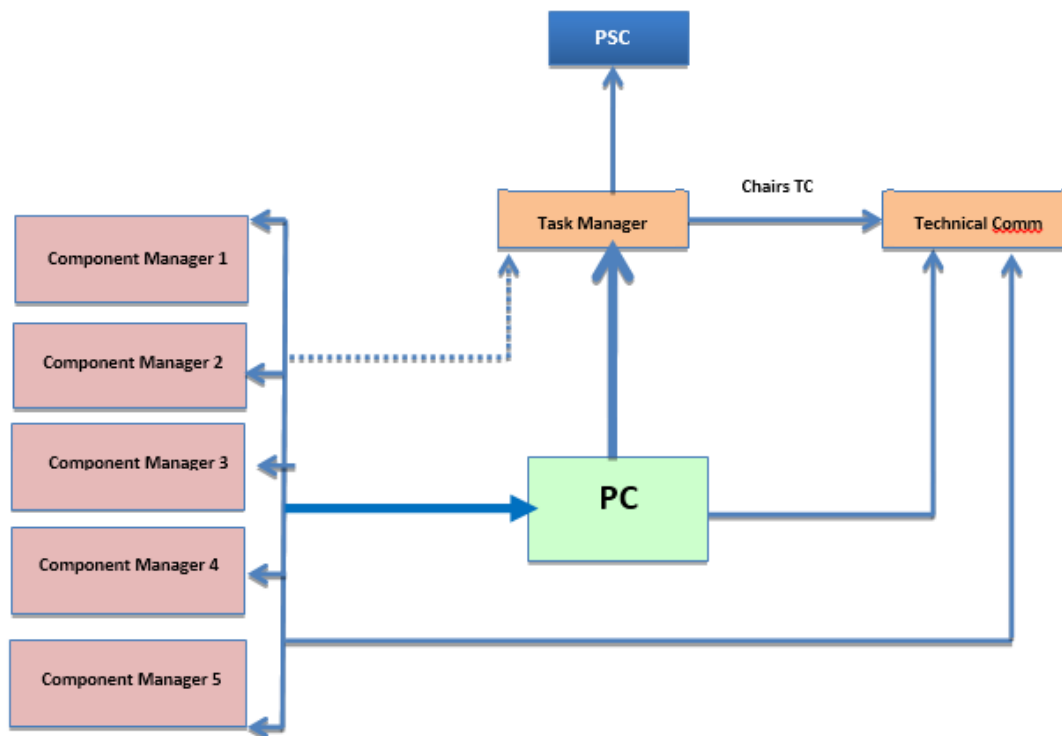
(d) **Project Coordinator** will provide overall support for implementation of the project including payments, financial management and accounting systems services to the Project Coordinator and Component Managers. The project coordination Unit will establish a financial management system in line with GOU Chart of Accounts for Budgeting, Financial Management, Accounting and financial reporting needs and to facilitate provision of financial control, execution of payments, accounting, bank reconciliation and financial management services to component managers. MAAIF will hire the core staff of the PCU and have fully operational PCU prior to effectiveness of the Credit. The project Coordination Unit will serve as the secretariat for the Technical and the Project Steering committees.

5. The PCU will have a number of technical as well as administrative positions, including the following: Project Manager; e-Voucher Advisor; e-Voucher Coordinator; Procurement Specialist; Procurement Assistant; Financial Management Specialist; Financial Management Assistant; Monitoring and Evaluation Specialist; Monitoring and Evaluation Assistant; Farmers' Organizations Specialist; Road Engineer; Water Engineer; Agronomist; Social Scientist; Environmental Specialist; and Advisor. ACDP will support the PCU by financing its operational costs, staffing, individual consultants, contracts with firms to implement aspects of all four components (including, *inter alia*, firms and organizations to implement: the e-Voucher system and associated training under Component 1; firms to carry out prefeasibility and feasibility studies and designs under Component 2; and apex farmer organizations to carry out capacity building under Component 3), studies and dissemination of their findings, matching grants under Components 1 and 3, M&E-related activity, reporting, planning, and consultations and conferences.

6. The PCU will function as a mediator if conflicts arise at cluster or district level. The PCU will liaise with the National Multi-stakeholder Platform (NMSP) for each commodity

chain to get advice on how best to develop the respective subsectors and value chains from a national point of view. NMSP consists of members of the National Commodity platforms for beans, cassava, coffee, maize, and rice. NMSP’s objective is to facilitate a broad value chain approach to project implementation. It will provide guidance to MAAIF in the respective commodity subsectors, and will monitor and advise on regional trade issues and opportunities and regulatory frameworks as they relate to ACDP, and will also monitor and advise on core project risks. The Project will provide the required capacity building, equipment, short-term TA, and contractual services for effective implementation. ICT aspects of Component 1 will be housed within MAAIF .under the unit responsible for information and communication.

Institutional Arrangements for the Project Coordination Unit within MAAIF



Notes:

- Project Steering Committee chaired by the Permanent Secretary, MAAIF
- Technical Committee chaired by the Task Manager
- Task Manager Headed by MAAIF Senior Officer (Designated)
- PCU headed by the Project Coordinator (Externally Recruited)
- Component Managers work very closely with the Project Coordinator

7. **Project management mechanisms at cluster/district level.** Commodity Cluster Multi-Stakeholder Platforms (CMSPs) will provide a forum for planning, dialogue, and participatory evaluation among stakeholders. Each CMSP will comprise representatives from involved districts, farmers’ organizations, and the private sector. Each district authority will be represented by three persons (LC V, CAO, & DPO) in a way that all these functions are

represented on the CMSP.. Farmers' organizations and private sector should together constitute the majority of the CMSP and the chair selected to secure that value chain perspectives guide decision making (the CAO or a person assigned by the CAO and co-chaired by private sector (too broad, need to explicitly identify the key players)/farmers' organizations representatives). The daily secretariat of the CMSP will be within the host district's LG, on a rotational basis. The function of the CMSP is to jointly agree on project priorities and submit proposals for interventions at cluster level to MAAIF. Once approved by MAAIF, interventions will be implemented at district level. A Memorandum of Understanding (MoU) between the cluster member districts may be necessary to operationalize the CMSP as a super-district authority. (Clarify to make it a commodity cluster, multi-district platform looking at all the value chain of that particular level;LCV, DPO, CAO be included in the team)

8. **Project implementation at cluster/district level.** To implement activities at cluster/district level, Local Government (LG) will work in liaison with MAAIF in the respective districts. Day-to-day implementation will be ensured by the District Production Officer. (DCTs) established by the involved districts. Each DPO will comprise at least the following: DPO (team leader), Community Development Officers (CDO), District Environment Officers, officers responsible for commodities, and officers responsible for marketing in the District, Commercial Officers. DPOs will liaise with producer organizations/cooperatives and other value chain representatives.

9. **District governments play a major role in the implementation of ACDP.** While CMSP makes the priority setting, work plan, and budget, districts are the implementing agencies at local level. Under the decentralization framework, local governments are responsible for delivery of essential services to the population at district level, including agriculture-related services. At the moment, there is neither a formal relationship between MAAIF and local governments nor a structure linking the two for efficient and effective service delivery. To this end, an MoU (mentioned above) will be signed that spells out the roles and responsibilities of both parties as well as the CMSP. Refer to Paragraph 7.6harmonize

10. Any funds transferred to districts under ACDP will be managed under the existing local government guidelines and structure, and the CAOs will oversee the project implementation including financial accountability. The DPO at the district levels are LG employees. Their activities will be fully integrated and mainstreamed within the district production departments and embedded in their management processes. The specific roles that LGs play include oversight, coordination, technical backstopping, M&E, financial and procurement management, and monitoring the project within their respective jurisdictions.

Component Implementation Modalities

11. **Component 1. Support for Intensification of On-Farm Production.** Implementation of the e-Voucher scheme and the supporting training for farmers will be quite challenging in the start-up and scale-up stage. MAAIF will contract a Voucher Management Agency (VMA) to launch and implement these programs (subcomponents 1.1 and 1.2 and parts of 1.3). The VMA will subcontract selected elements of the implementation of the

programs. These arrangements are summarized in the draft Project Implementation Manual (PIM). For subcomponent 1.3, the VMA will and MAAIF's Departments of Crop Production and Marketing (DCP&M) and Crop Inspection and Certification (DCI&C) will share responsibility for implementation of subcomponent 1.3. The VMA will work with agricultural input supply dealers and stockists to: ensure that they understand how to play their role in the e-Voucher system; and assist them to coordinate their efforts to scale up to meet the increased demand for inputs that will be created through the voucher recipients. In MAAIF, the Agribusiness Unit will work closely with an agricultural inputs specialist/advisor in the PCU in the formulation and implementation of ACDP work plans for subcomponent 1.3. This will include the formation of an agricultural inputs working group that will include representation from MAAIF's DCP&M and DCI&C, input associations (e.g., Uganda National Agro-dealer Association (UNADA), Uganda Seed Trade Association (USTA), and Fertilizer Market Development Council (FMDC)), and other stakeholders. The project will support the formation and activities of the working group as well as the activities of MAAIF's departments in carrying out ACDP-related activities. With the support of the PCU, the agricultural inputs working group will provide guidance and oversight over ACDP-related activities by MAAIF's crop departments. MAAIF and VMA will work together in the accreditation of input supply dealers to participate in the voucher program.

12. The operation of the e-Voucher scheme will be established and initially managed by the VMA, which will be tasked with setting up the system, delivering the fund flow to the input sellers, and training the public sector to manage and monitor scheme implementation. The VMA will: (i) generate information for project management on: (a) fund flow to the inputs supplier; and (b) products purchased in aggregate by district and for individual beneficiaries so that a random sample of beneficiaries will be followed up to ensure that grant funding is used as intended; and (ii) create market intelligence of the effectiveness of the e-Vouchers to increase sales of inputs. This will be communicated with the input supplier sector so it can better anticipate demand and make timely investments.

13. The project will be conducted in phases to enable the new ways of operating to be tested, refined, and simplified before larger-scale rollout. This will allow learning by doing and will enable contracted private companies to set up the systems, pilot the early phases, and refine systems. At the same time, it will raise MAAIF's capacity to run programs on an ongoing basis enabling different modes of delivery to be tested.

14. In year 0, a spearhead team will work in five clusters covering all five commodities and will engage 30,000 farmers in total. The team will carry out a survey of potential local partners using a structured questionnaire to build a score that assesses the capacity or competence¹⁸ of the existing level of operation and functionality of ACCEs, RPOs, and the

¹⁸ The project will refine the existing scope of the basic scoring system used by IFC to assess producer organizations' capacity, combined with the methodologies used in Vietnam and Rwanda by the World Bank.

private sector for input supply and output marketing organizations. The purpose is to: (i) create a database of cluster stakeholders; (ii) create a baseline of competence and capacity with which to track changes over time; and (c) provide a basis for deciding with whom to partner.

15. In the first clusters, four alternative ways of working with RPOs will be tested as described in Table A3.1. These will establish the costs and benefits of focusing on the more competent RPOs, targeting the e-Vouchers on members who have a track record of supporting them, as opposed to providing all members with e-Vouchers.

Table A3.1: Alternative ways of working with RPOs

1.	<p>e-Vouchers will be targeted at RPOs judged to be of top 65% in terms of capacity and performance. The counterfactual will be those RPOs whose score is just below this category.</p> <p>The RPO will be provided with e-Vouchers for distribution amongst a selection of its members who are within a specific size category (e.g., ½ to 2 ha).</p>
2.	<p>e-Vouchers will be supplied only to those RPOs judged to be in the top 65% in terms of capacity and performance. The counterfactual will be those RPOs whose score is just below this category.</p> <p>The RPO will be provided with e-Vouchers for all its members who are within a specific size category (e.g., ½ to 2 ha).</p>
3.	<p>A random sample of RPOs will receive e-Vouchers and will be compared with another group of RPOs as the counterfactual.</p> <p>The RPO will be provided with e-Vouchers for distribution amongst a selection of its members, say 60%, who are within a specific size category (e.g., ½ to 2 ha).</p>
4.	<p>A random sample of RPOs will receive e-Vouchers and will be compared with another group of RPOs as the counterfactual.</p> <p>The RPO will be provided with e-Vouchers for all its members who are within a specific size category (e.g., ½ to 2 ha).</p>

16. This design will test the most cost-effective way of operating for jumpstarting production and lifting marketing surplus. It will also help answer the following questions: (i) does the intervention work significantly better when focused on the most organized and effective RPOs?; (ii) is effectiveness enhanced by enabling RPOs to focus the e-Vouchers on its better, more professional members?; and (iii) does the e-Voucher scheme provide the incentives needed to raise RPOs' capacity in response to the opportunity provided by the e-Voucher?

17. The spearhead team will draw together stakeholders for consultation sessions to identify their perception of the key choke points within that cluster for a selected crop (e.g.,

maize). These will be carried out in each district. Representatives of these sessions will be chosen by the CMSP representatives. Three types of training will be provided in each cluster as described in the following paragraphs.

18. Each selected RPO will be provided with **training on the operation of the e-Voucher scheme**. The training will cover topics including who among members are eligible to apply. Participating farmers will receive training on (i); (i) the menu of inputs for which farmers can use their matching grants; (ii) the time-limited nature of the intervention; (iii) the imperative of the producer to save some of the “super profits” as working capital for subsequent season’s production; (iv) the recommended use of seed and fertilizer (e.g., varieties, fertilizer types, applications); (v) the eligible input suppliers for e-Vouchers; (vi) the consequences to the RPO and its members if misuse of the e-Vouchers is detected (e.g., withdrawal of the e-Vouchers for all members); and (vii) the potential benefits to RPOs who demonstrate good response to the e-Voucher scheme (e.g., increased sales, greater level of internal organization, eligibility for grant funding for shared marketing facilities, etc.). The VMA will use subject matter specialists at district level to train the trainers who will provide the training for farmers as listed above.

19. **Training and accreditation of inputs suppliers** will cover: (i) how the schemes will work in practice; (ii) advice they should provide to farmers (e.g., recommended seed/varieties for areas, fertilizer types and application, hermetically-sealed storage); (iii) consequences of an accredited input supplier misusing the scheme (e.g., withdrawal of accreditation and likely legal action); and (iv) the scheme’s benefits (i.e., the additional expenditure on inputs the e-Voucher scheme will generate over the next two to three years) and the need to prepare supplies in advance.

20. **Marketing training** will be provided to marketing managers from ACCEs, RPOs, and the private sector, covering: (i) the findings of the market survey (both the survey already conducted in the preparation of this PAD and those to be systematically repeated during the course of the project); (ii) a database of potential buyers; (iii) product quality; (iv) the role, operation, and services to be provided by the apex markets information center; and (v) a forum for buyers and sellers to meet.

21. Each cluster will have a budget whose focus of spending will be determined by the CMSP. The focus will be on clear public goods (e.g., missing gaps in local area infrastructure, and possibly R&D or dissemination needs). Funding will be via local authorities with advance payments, and subsequent investments based on proposals developed by the CMSPs and approved by the PCU.

22. The lessons from the first four clusters’ experience will be reviewed and integrated into a rollout program for the remaining eight clusters, covering two commodity enterprises per cluster. The rollout program will also implement the remaining crop enterprises in the initial four clusters. At that stage, the resource requirements for implementation will be better understood, and the spearhead team working in the first four clusters will lead the training and implementation in the remaining clusters, working with a team to include a broader range of MAIIF staff.

23. **Component 2. Preparation for Agricultural Water Management Investment.** The overall coordination of Component 2 will be ensured by MAIIF through the Irrigation Unit

within Department of Farm Development (DFD). DFD will coordinate subcomponent 2.1 (planning for irrigation and drainage infrastructure development) in collaboration with MoWT for access roads and National Environment and Management Authority (NEMA) for wetland protection and conservation. A key feature will be MAAIF support to the DCTs to ensure that the specific institutional arrangements and agronomic practices associated with each irrigation scheme are developed in a consistent fashion. These same agencies will also implement training for water users' groups in the O&M of irrigation schemes under subcomponent 2.2. For subcomponent 2.3 (integrated soil and water conservation/management design for irrigation areas and associated buffer zones), cooperative agreements will be set up with MWE for water use and NEMA for environmental assessment. For any subsequent investments in works, the Nile basin members will be informed by government in case of water withdrawals over and above evapotranspiration from existing/non-irrigated wetlands within the Kyoga sub-basin of the Nile.

24. **Component 3. Market Linkages, Post-harvest Handling, Storage, and Value Addition.** This component will be implemented by a broad range of public and private sector stakeholders. Subcomponent 3.1 (national-level agribusiness and marketing support) will predominantly be implemented through studies and training. Uganda Cooperative Alliance (UCA) will be contracted at the national level for institutional capacity building of farmers' organizations and their apexes. Training of value chain actors in local and regional marketing will be coordinated by the DCTs. Subcomponent 3.2 (market access roads and market infrastructure at community level) decision making will be facilitated by the CMSP as a participatory, value chain-driven, priority-setting exercise at cluster level, to be endorsed by MAAIF. Subcomponent 3.3 (ACCE-level warehousing, value addition and marketing) will also be implemented through a competitive matching grant scheme managed by the PCU, after initial screening by local CMSPs. ACCEs and other farmers'/producer organizations will be eligible to compete for this. Farmers' organizations, including cooperatives, will play a key role by: (i) mobilizing their members and informing them of project opportunities; (ii) assisting their members in organizing into sustainable cooperatives through coordinated institutional support; (iii) participating in programming and monitoring of activities; (iv) providing institutional capacity-building support to their members; (v) organizing regional exchanges; (vi) providing market information; (vii) facilitating linkages to regional off-takers; and (viii) handling knowledge management.

25. Training and technical support to national-level apex farmers' organizations under subcomponent 3.3(b) will be provided by MAAIF through its DCP&M and Agribusiness Unit (with the support of consultants, as needed). The matching grant program under subcomponent 3.3(c) will be managed by the ACDP PCU. The PCU together with contracted national-level apex farmers' organizations will provide TA to eligible ACCEs as needed to help them with the formulation of proposals. Cluster committees will review proposals annually and endorse a group of proposals (totaling to no more than an assigned per-cluster ceiling) for consideration on a competitive basis by the matching grant committee of the ACDP PCU.

26. **Component 4. Project Management, Policy, Regulatory, and ICT Functions of MAAIF.** This component will be coordinated by the PCU within MAAIF. The PCU will work closely with various MAAIF Departments. The Department of Planning and M&E will be responsible for consolidation of the annual work plan and budgets and for M&E

implementation. National stakeholder events will be organized by the PSF in collaboration with the NPSC.

27. A significant part of the project will be carried out at district level. LGs already carry out projects and programs, in line with the decentralized nature of government in Uganda. However, they are often not properly briefed, trained, or funded. As the first step in the project preparation and implementation, a series of training workshops/sessions will be held in the respective clusters, bringing together key government senior staff and key stakeholder representatives. To the degree possible, awareness raising and sensitization at district and cluster level should be carried out prior to project start.

B. Financial Management and Disbursement Arrangements

Executive Summary

28. A Financial Management (FM) assessment was conducted at MAAIF headquarters and seven sampled districts (Palissa, Mbale, Gulu, Apac, Kasese, Kyenjojo, Hoima, Masindi, and Kabale). The FM assessment was carried out in accordance with the Financial Management Practices Manual issued by the Financial Management Sector Board on March 1, 2010.

29. The objective of the FM assessment was to determine under OP/BP 10.00: (a) whether adequate FM arrangements are in place to ensure ACDP funds will be used for the purposes intended in an efficient and economical way; (b) that ACDP financial reports will be prepared in an accurate, reliable, and timely manner; (c) that the implementing entities' assets will be safeguarded; and (d) that entities are subject to auditing arrangements acceptable to the Bank. Under OP/BP 10.00, borrowers and project implementation entities (IEs) are supposed to have and maintain adequate FM systems that include budgeting, accounting, internal controls, funds flow, financial reporting, and auditing arrangements to ensure that they can readily provide accurate and timely information regarding the project resources and expenditures.

30. These arrangements are deemed acceptable if they: (i) are capable of correctly and completely recording all financial transactions and balances relating to project resources; (ii) can facilitate the preparation of regular, timely, and reliable financial statements; (iii) safeguard the project's assets; and (iv) are subject to auditing arrangements acceptable to IDA.

31. Actions outlined in the Financial Management Action Plan will be undertaken by MAAIF and districts to strengthen the FM system.

32. To effectively implement the project, MAAIF and the districts will ensure that appropriate staffing arrangements are maintained throughout project life.

Country Issues

33. The Public Expenditure and Financial Accountability (PEFA) Report of 2012 indicated that the GoU has carried out key reforms, including public service reform, decentralization, and public financial management (PFM). The National Development Plan (NDP) provides the overarching strategy for all GoU reforms. The public service reforms aim to improve service delivery by instilling modern management practices into Uganda's public service and properly motivating and equipping public servants. Decentralization is meant to

improve service delivery provided by LGs by taking services closer to people and empowering them to have a say in deciding on and monitoring these services. The Office of the Prime Minister coordinates all GoU programs and MDA (Ministry-Department-Agency) activities and carries out an annual performance management assessment to ensure that they are achieving their agreed objectives and outputs. The PFM reforms support and benefit all other GoU reforms because they provide the means of ensuring that the resources allocated to the various reforms are applied effectively and efficiently to achieve the intended purposes and attain value for money. The PFM reforms cover the entire budgeting cycle: budget preparation, budget execution, and oversight and scrutiny. The reforms have been pursued since the early 1990s and are continuing. The current reforms build on past achievements and now concentrate on: improving the credibility of the budget; ensuring that PFM legislation is complied with; and ensuring that audit recommendations are implemented. GoU is carrying out the PFM reforms with the support of several donors. The more notable reforms include the ongoing review and revision of the Public Finance and Accountability Act, the upgrade of the IFMIS, and many other initiatives supported by MoFPED's FINMAP (Financial Management and Accountability Programme) in the implementation of the PFM reform strategy. As reported by the Auditor General, high-level corruption in the OPM and Ministry of Public Service among others is still a major challenge. Through the high-level matrix agreed with DPs, the GoU is addressing some of these corruption challenges.

34. The June 30, 2013 Annual Audit Report released by the Auditor General identifies persistent inadequate accountability across MDAs, including overpayment/wasteful expenditure, inadequate supporting documents, unaccounted for advances, suspected fraud/misappropriation, unjustified fuel expenditure, irregular staff allowances, and failure to follow procurement regulations, among others.

Risk Assessment and Mitigation

35. The following are necessary features of a strong FM system:

- An adequate number and mix of skilled and experienced staff are needed in the accounting and internal audit unit;
- The internal control system should ensure the conduct of an orderly and efficient payment and procurement process, and proper recording and safeguarding of assets and resources;
- The accounting system should support the project's requests for funding and meet its reporting obligations to fund providers, including GoU, IDA, other donors, and local communities;
- The system should be capable of providing financial data to measure performance when linked to the output of the project; and
- An independent, qualified auditor should be appointed to review the project's financial statements and internal controls.

Weaknesses in Ongoing Projects under MAAIF

36. Several accounting weaknesses were identified in the ongoing projects (ATAAS and East Africa Agricultural Productivity Project (EAAPP)) under MAAIF, including inadequate accounting staff, unclear accountabilities, delayed reporting by districts, failure to reconcile some expenditures, procurement-related issues, delayed reporting, unaccounted for advances, diversion of project funds, inadequate funding of budget, and value for money issues. Pooled funding also presented a major challenge in terms of reporting closing balances and attributing expenditure and payment of staff allowances allowable under government.

37. This will be mitigated by ensuring a dedicated project accountant is recruited at MAAIF headquarters within six months of project effectiveness. To address the staffing challenges at the districts, the vacant positions of Chief Finance Officer will be filled by the respective districts before MAAIF releases funds to the districts. Similarly, the vacant positions for district head of internal audit should be filled before the Ministry disburses to the districts.

38. The project will not have a pooled arrangement but instead a project-specific bank account. To increase regular reviews due to the above risks, resources will be provided for accounting departments at MAAIF headquarters and in the districts to follow up on resource utilization, accountability, and reports. In addition, internal audit reviews will be conducted at MAAIF and districts and semi-annual reports shared with the Bank.

39. Table A3.2 identifies the key risks the project management may face in achieving these objectives and provides a basis for determining how management should address them. The overall residual risk is assessed as **Substantial** upon meeting the conditions in the risk assessment and mitigation table.

Table A3.2: Key ACDP risks and risk-mitigating measures

Risk (H – High, S – Substantial, M – Moderate, L – Low)	Risk rating	Risk-mitigating measures incorporated into project design	Mitigated risk
Country Level- The 2012 PEFA report identified weaknesses in government PFM systems. Enforcement of procurement rules is still weak. Governance issues including the scandals in the OPM and Public Service Ministry still present a major challenge. June 30, 2013 audit report identifies major weaknesses in FM across government departments.	S	Weaknesses in accounting capacity, budget classification, payroll rules, and procurement compliance are being mitigated under a government PFM reform program under FINMAP. A high-level matrix agreed between DPs and GoU is being implemented to address the governance issues.	S
Entity Level- The Auditor General’s reports of June 30, 2013 for MAAIF and 18 districts were unqualified, with weaknesses and accountability challenges that need to be addressed. Twenty-two districts had qualified reports, with material weaknesses that need to be addressed. FM weaknesses were noted in the ongoing EAAPP by the FM Supervision. Major weaknesses were noted during an in-depth audit of ATAAS, mainly due to implementation of activities outside the work plan. Delays may be experienced in submission of reports by the districts as noted in ongoing Bank-financed projects. Shortage of fiduciary and technical staff at MAAIF and districts may affect project	H	Reporting deadlines will be incorporated in project documents with close follow-up by MAAIF and adequate facilitation of district fiduciary staff to ensure compliance and address weaknesses identified in the audit reports. Staffing gaps will be addressed by recruitment of a project accountant at MAAIF and also recruitment / filling vacant positions of Chief Finance Officers and Head Of internal Audit at district level. MAAIF will engage other ministries’ (MoWT and MWE) support in infrastructure development from the planning to the implementation and	H

Risk (H – High, S – Substantial, M – Moderate, L – Low)	Risk rating	Risk-mitigating measures incorporated into project design	Mitigated risk
implementation especially accounting, reporting, and infrastructure development supervision.		supervision stages.	
<p>Project Level- Forty-one districts and several subcounties will implement the project. Capacity constraints exist at the LG level in managing infrastructure projects. Delays in project completion and variations and nonadherence to contract conditions are a risk. The risk of poor-quality works and premature failure on works also exists.</p> <p>There is a risk of duplication of other infrastructure development programs already being implemented by the GoU and DPs.</p>	H	<p>LG capacity on infrastructure development will be complemented by the MoWT in addition to consultants to be hired to offer support and capacity building.</p> <p>Project identification process will be inclusive, with a bottom-up approach with all stakeholders on board.</p>	S
		Overall Inherent Risk	High
<p>Budgeting</p> <p>Inadequate funding of approved budget and budget cuts affecting approved work plans, resulting in increased outstanding payables and exposing districts to risk of higher cost and litigation by suppliers and contractors. Ministry and districts charging expenditure on different votes without following due process. Delays in execution of budgets resulting in cost overruns. Poor feasibility studies resulting in unrealistic budgets that call for frequent revisions. The chart of accounts as provided by the MoFPED is inconsistent with project costing as per expenditure components and categories. Manipulation of manual vote books in ensuring expenditure within approved votes and budget. Implementation of activities outside approved budget under ATAAS by NAADS.</p>	H	<p>Project budget will be ring-fenced to guard against diversion or budget cuts. Detailed feasibility studies will inform realistic budgets and their timely execution.</p> <p>Budgeting under the project will be aligned to the activities. The project will be on IFMS to enhance budgetary control.</p>	S
<p>Accounting</p> <p>The June 30, 2013 audit report for MAAIF identified accounting weaknesses that include the mischarge of expenditure and poor budget performance. The report also identified several weaknesses and irregularities in the districts, including funds unaccounted for, understaffing, procurement anomalies, doubtful expenditure, outstanding administrative advances, excess expenditure, payroll anomalies, loss of funds, noncompliance with Income Tax Act, shoddy /unsatisfactory construction work, wasteful expenditure, and unspent conditional grants, among others. The report also emphasized the need to update the Local Government Financial and Accounting Manual.</p> <p>Accounting staff gaps exist at MAAIF and districts. MAAIF is on IFMIS whereas some of the districts</p>	H	<p>Recruitment of required accounting staff at MAAIF HQ will occur within 6 months after project effectiveness. Release of the funds to the districts by MAAIF will be done after filling the vacant CFO positions in the districts. Staff will be expected to address the weaknesses identified.</p> <p>Manual reporting at districts will be enhanced with the use of Excel.</p> <p>FM training for the project teams will be carried out within 6 months after project effectiveness.</p>	S

Risk (H – High, S – Substantial, M – Moderate, L – Low)	Risk rating	Risk-mitigating measures incorporated into project design	Mitigated risk
sampled are on manual accounting systems. The manual system exposes districts to the risk of manipulation of the system, errors, delays in reporting, and loss of the internal controls inbuilt in IFMIS.			
<p>Internal Control</p> <p>Management delays in response and follow-up on the internal control weaknesses reported by the external and internal audits. Nonadherence to the internal audit work plan and irregular audit committee meetings. Inadequate internal audit staffing at districts and lack of adequate budget for department activities. Weak technical audit skills and experience. Implementation of activities outside approved budget under ATAAS by NAADS.</p> <p>The June 30, 2013 audit reports for MAAIF and districts noted numerous cases of override of the controls as provided for in the Treasury Accounting Instructions 2003 and Local Government Financial and Accounting Manual.</p> <p>The June 30, 2013 Audit report highlighted key weaknesses in the internal audit function in the districts, including underfunding, inadequate staffing, failure to discuss internal audit reports by District Public Account Committees (DPACs), and non-implementation of internal audit recommendations.</p>	H	<p>Deployment / recruitment of districts’ Head of Internal Audit will occur before release of funds by MAAIF to districts.</p> <p>Management action on Auditor General and Internal Audit reports will be monitored through the semiannual internal audit reports submitted to the Bank by MAAIF (including those from districts).</p> <p>There will be adherence to internal audit work plans and holding of quarterly audit committee meetings.</p> <p>Adequate internal audit budgets will be provided under the project. Technical audits will be supported by consultants.</p>	S
<p>Funds Flow</p> <p>Delays in disbursement of funds to the districts by MAAIF. Diversion of project funds to meet other nonproject activities were noted in the internal and external audit reports, exposing the project to the risk of loss of funds or delay in project activities.</p>	S	<p>Districts will open project-specific bank accounts and disbursement will be directly from MAAIF to the accounts.</p>	S
<p>Financial Reporting</p> <p>Delays occur in submission of quarterly reports in the desired format by districts. Inaccurate and incomplete financial statements are produced by districts on manual systems.</p>	H	<p>Reporting format will be agreed between MAAIF, districts, and the Bank. Training will be undertaken before disbursement. District accounting staff will be facilitated with monitoring resources to ensure timely reporting.</p>	S
<p>External Audit</p> <p>There are delays in submission of financial statements for audit and in submission of audited financial statements as noted in other projects implemented by agencies under MAAIF.</p> <p>The Auditor General’s reports of June 30, 2013 for MAAIF and 18 districts were unqualified, but with weaknesses in Management Letter. Twenty-two other districts had qualified reports, with material</p>	H	<p>Project will submit draft financial statements for audit within the submission deadline of September 30 of each year.</p> <p>Adequate mitigation measures have been proposed in the accounting and internal controls section to address the weaknesses.</p>	S

Risk (H – High, S – Substantial, M – Moderate, L – Low)	Risk rating	Risk-mitigating measures incorporated into project design	Mitigated risk
weaknesses and accountability challenges.			
Overall Risk Rating	S		S

Institutional and Implementation Arrangements

40. MAAIF will be responsible for overall implementation of ACDP. During project execution, MAAIF shall coordinate project implementation and manage: (i) procurement, including purchases of goods, works, and consulting services except those to be procured at the districts; (ii) project monitoring, reporting, and evaluation; (iii) contractual relationships with IDA and other co-financiers; and (iv) FM and recordkeeping, accounts, and disbursements.

41. MAAIF will constitute the operational link to IDA and the GoU on matters related to project implementation.

42. The PS of MAAIF will be the “Accounting Officer” for the project, assuming overall responsibility for accounting for project funds.

Budgeting Arrangements

43. Budgeting for the project in MAAIF and the districts will be in line with the government budgeting cycle and as per the Public Finance and Accountability Act, 2003 and Treasury Accounting Instructions 2003. The project will be 100 percent funded by IDA except for cost elements such as contract committee sitting allowances and honoraria that will be budgeted under MAAIF / district general budget. The assessment noted consistent inadequate funding of approved budget and budget cuts by the MoFPED affecting implementation of approved work plans. This results in increased outstanding payables and/or exposing Ministry/districts to risk of higher cost and litigation by suppliers and contractors. MAAIF and some districts are charging expenditure on different votes without following due process. There are delays in execution of budgets, resulting in cost overruns for projects. Poor feasibility studies on infrastructure projects have resulted in unrealistic budgets that call for frequent revisions. The chart of accounts as provided by the MoFPED is not compatible with project costing per components and categories as provided in the project documents (Financing Agreement and PAD). Manipulation of manual vote books in districts’ operating manual accounting system has resulted in expenditure outside approved votes and limits.

Accounting Arrangement

44. The accounting function will be managed as documented in the Public Finance and Accountability Act, 2003, Treasury Accounting Instructions 2003, Local Government Financial and Accounting Manual 2007, Local Government (Financial and Accounting) Regulations 2007, and the provisions of the PIM, which will include requirements specific to Bank-financed projects. MAAIF’s Principal Accountant will be responsible for day-to-day FM activities of the project. MAAIF will recruit a project accountant to support MAAIF

accounting staff assigned to the project within six months of project effectiveness. Vacant positions for Chief Finance Officers in the districts need to be filled before funds are released to the districts for project activities.

45. MAAIF and six of the districts visited are on IFMIS while one uses a manual accounting system. This district is exposed to the risk of manipulation of its accounting system, errors, and delays in reporting, and lacks the internal controls inbuilt in IFMIS.

46. The June 30, 2013 audit report for MAAIF identified accounting weaknesses that include the mischarge of expenditure and poor budget performance. The report also identified several weaknesses and irregularities in the districts, including funds unaccounted for, understaffing, procurement anomalies, doubtful expenditure, outstanding administrative advances, excess expenditure, payroll anomalies, loss of funds, noncompliance with the Income Tax Act, shoddy/unsatisfactory construction work, wasteful expenditure, and unspent conditional grants, among others. The report also emphasized the need to update the Local Government Financial and Accounting Manual.

47. The FM Supervision on EAAPP and ATAAS noted weaknesses such as poor records management resulting in unsupported expenditure, lack of advances ledgers, overdue advances, and failure to submit quarterly reports on the project. Follow-up on the proposed mitigation measures will be closely monitored.

Internal Control

48. The internal controls are documented in The Public Finance and Accountability Act, 2003, Treasury Accounting Instructions 2003, Local Government Financial and Accounting Manual 2007, Local Government (Financial and Accounting) Regulations 2007, and the provisions of the PIM, which will include requirements specific to Bank-financed projects. This will include a comprehensive fixed assets register, a staff advances ledger, and maintenance of vehicle movement logbooks and fuel consumption statements. The June 30, 2013 audit report recommended updating the Local Government Financial and Accounting Manual due to control weaknesses noted.

Internal Audit

49. MAAIF's Internal Auditor in collaboration with the district internal auditors will be required to conduct semi-annual internal audit reviews on the project and to submit the report to the Bank within 45 days after the end of each semester. An annual fiduciary review will be conducted by MoFPED's Internal Audit Directorate. The resources for the reviews by MAAIF and district internal auditors will be provided for under the project. The assessment and June 30, 2013 audit report noted frequent management delays in response and follow-up on the internal control weaknesses reported by the external and internal audits and non-implementation of recommendations. Non-adherence to the internal audit work plan and irregular District Public Accounts Committee (DPAC) meetings were noted at the districts. The districts' internal audit departments lack adequate budget for audit activities, which has limited their reviews. There are also weak technical audit skills and experience for the review

of infrastructure-related activities. Consultants will be engaged to support internal audits. MAAIF and districts do not have risk profiles for their entities even though they adopted risk-based auditing more than five years ago. Inadequate internal audit staffing was found in the districts sampled. Filling the position of Head of Internal Audit will be required before MAAIF disburses to the districts.

50. MAAIF and the districts are guided by the Local Government Internal Audit Manual 2007.

Funds Flow Arrangement –Bank Accounts

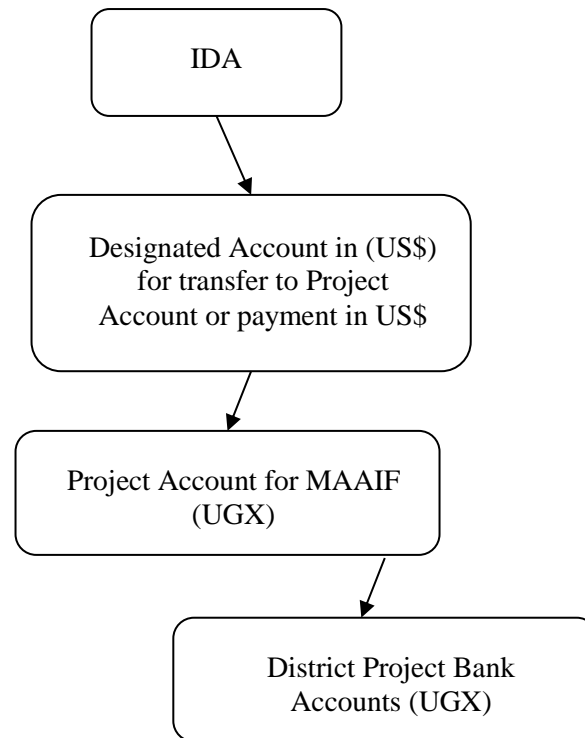
51. MAAIF will open a Designated Account denominated in US dollars in BoU in which disbursements from the IDA Credit will be deposited. It will also open a Project Account denominated in local currency in the BoU into which transfers from the Designated Account (for payment of transactions in local currency) will be deposited. Transfers to the local currency account will only be on a need basis. Districts will also open project-specific bank accounts denominated in local currency in commercial banks acceptable to the Bank in which transfers from MAAIF will be made for project activities. The signatories for the project will be done in accordance with the Treasury Accounting Instructions 2003.

52. The GoU is rolling out IFMIS and implementing the Treasury Single Account (TSA). The proposed banking arrangements above will be reviewed as the reforms are extended.

Flow of Funds

53. MAAIF will use the report-based disbursement procedure and funds flow arrangements for the project (through the two bank accounts above) as follows: (i) MAAIF will prepare six-month cash flow forecasts for the project based on the work plan and submit the Withdrawal Applications and cash forecasts together with the cash request to the Bank after project effectiveness. Subsequent withdrawal applications should be submitted quarterly with IFRs within 45 days after the end of the quarter, accompanied by a cash forecast for the next six months. The quarterly periods follow the calendar year quarters, hence IFRs should be prepared as of end of March, June, September, and December; (ii) IDA will make an advance disbursement from the proceeds of the Credit based on the cash flow forecast by depositing into a Borrower-operated Designated Account held at the BoU denominated in US dollars; and (iii) funds can be paid from the Designated Account or transferred to the project account denominated in Uganda shillings to make payments in this currency.

Figure A3.1: Funds flow chart for ACDP



Disbursement Arrangements

54. No withdrawals shall be made under ACDP for payments made prior to the date of the signing of the Financing Agreement for ACDP, except that withdrawals up to an aggregate amount not to exceed 20% will be eligible to finance eligible expenditures incurred no longer than one year before the signing of the Financing Agreement. The project will provide a facility for retroactive financing of expenses incurred prior to the effectiveness. With implementation of the agreed actions, MAAIF will provide effective FM and accounting systems, which will facilitate the use of report-based disbursement where cash flow forecasts based on work plans are submitted for a period of six months every quarterly period along with IFRs. The IFRs will be submitted for disbursement on a quarterly basis. In compliance with the report-based guidelines, the project will be expected to: (i) sustain a satisfactory FM rating during project supervision; (ii) submit IFRs consistent with the agreed form and content within 45 days of the end of each reporting period; and (iii) submit a Project Audit Report by the due date.

55. Upon effectiveness, MAAIF will be required to submit an IFR with the six-month cash flow forecast to IDA to make a deposit to the Designated Account. Replenishment of funds from IDA to the Designated Account will be made upon receipt of the quarterly IFRs. If ineligible expenditures are found to have been made from the Designated Account, the Borrower will be obligated to refund the same. If the Designated Account remains inactive for

more than six months, the Borrower may be requested to refund to IDA amounts advanced to the Designated Account.

56. For the reason set forth in subsection 5.2 of the Disbursement Guidelines, the advancing of financing proceeds into a designated account is not a Disbursement Method currently available under this Financing. Therefore, the opening and operation of a designated account was not available for disbursement under this Credit (as of Negotiations). As soon as this situation of lapsed loans under the Ugandan portfolio is resolved, the allowance of advances will be included the disbursement Methods listed in subsection I (i) of the Disbursement letter (DL) and will be so communicated in a revised letter subsequently issued. As a result and for reporting using the reimbursement and direct payment methods of disbursement, the supporting documentation necessary for this will be Statements of Expenditures as also communicated in the DL at the time of negotiations.

57. IDA will have the right, as reflected in the Financing Agreement, to suspend disbursement of the funds if reporting requirements are not complied with.

Financial Reporting Arrangements

58. The financial reports will be designed to provide high-quality, timely information to the project management, implementing agencies, and various stakeholders monitoring the project's performance. The reporting format by MAAIF and the districts has been agreed upon with the Bank.

59. The quarterly IFRs produced by MAAIF will include: (i) a statement of sources and uses of funds for the reported quarter and cumulative period (from project inception) reconciled to opening and closing bank balances; and (ii) a statement of uses of funds (expenditure) by project activity/component, comparing actual expenditure against the budget, with explanations for significant variances for both the quarter and cumulative period.

60. In addition to the IFRs, MAAIF will submit to the Bank the following information to support report-based disbursement: (i) a Designated Account Activity Statement; (ii) Designated Account Bank Statements; (iii) a Summary Statement of DA Expenditures for contracts subject to Prior Review; (iv) a Summary Statement of Designated Account Expenditures for contracts not subject to Prior Review; and (v) an aging analysis for advances to the districts.

61. The financial statements should be prepared in accordance with International Public Sector Accounting Standards (IPSAS) (which *inter alia* includes the application of the cash basis of recognition of transactions). The IDA Financing Agreement will require the submission of audited financial statements to the Bank within six months after the financial year end.

62. These financial statements will comprise: (i) a Statement of Sources and Uses of Funds / Cash Receipts and Payments; (ii) a Statement of Affairs/ Balance Sheet; (iii) a Statement of Fund Balance; (iv) a Designated Activity Account Statement; and (v) Notes to the Accounts.

External Auditing Arrangements

63. The Auditor General is primarily responsible for auditing all government projects. Usually, the audit is subcontracted to a firm of private auditors, with the final report issued by the Auditor General. The private firms subcontracted should be acceptable to the Bank. In case the audit is subcontracted to a firm of private auditors, IDA funding may be used to pay the cost of the audit. The audits are done in accordance with IPSAS. The appropriate ToRs for the external auditor have been agreed between the Bank and MAAIF. MAAIF will submit the project Audit Report together with the Management Letter to the Bank within six months after the end of each financial year.

64. The Auditor General's reports of June 30, 2013 for MAAIF and 18 districts were unqualified, but with weaknesses in Management Letter. Twenty-two other districts had qualified reports, with material weaknesses and accountability challenges. Adequate mitigation measures have been proposed in the accounting and internal controls section to address the weaknesses.

Financial Management Action Plan

65. The action plan in Table A3.3 indicates the actions to be taken for the project to strengthen its FM system and their completion due dates.

Table A3.3: ACDP's FM action plan

Action	Due by:	Responsible
Recruitment of project accountant at MAAIF HQ	6 months after effectiveness	MAAIF
Filling of vacant positions of district Chief Finance Officers and Head of Internal Audit	Before MAAIF disburses funds to the districts.	MAAIF/MoPS /DLG
Training of project accounting and auditing staff at MAAIF HQ and districts	6 months after effectiveness for HQ	MAAIF and World Bank
Internal Audit Reviews	Semi-annually	MAAIF
Annual Fiduciary Reviews	Annually	MoFPED – Internal Audit

Effectiveness Conditions

66. Conditions of Effectiveness will include: (a) Establishment and operationalization of a functional Project Coordination Unit; (b) appointment of the Voucher Management Agent; and (c) preparation and adoption of the Project Implementation Manual.

Financial Covenants

67. 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.

Supervision Plan

68. A supervision mission will be conducted twice a year based on the risk assessment of the project in accordance with the Financial Management Practices Manual issues by the Financial Management Sector Board. The mission's objectives will include ensuring that strong FM systems are maintained for the project throughout its life. However, reviews arising out of the IFRs will be carried out regularly to ensure that expenditures incurred by the project remain eligible for IDA funding. The Implementation Status Report (ISR) will include an FM rating for the components.

Conclusion of the Assessment

69. MAAIF and districts' FM arrangements' risks are assessed as **Substantial**. The assessment indicates that although the project does not satisfy the Bank's minimum requirements under OP10.00, key time-bound actions can be effected for the system to adequately provide, with reasonable assurance, accurate and timely information on the status of the project as required by the Bank. The recommended improvements are detailed in Table A3.3.

C. Procurement

70. **Procurement agencies and packages under the project:** Procurement for the project's components will be conducted by the following agencies (Table A3.4):

Table A3.4: Major ACDP procurements and responsible agencies, by component

Component	Agency responsible for procurement	Major procurements expected
Component 1: Support for Intensification of On-Farm Production (US\$90 million)	MAAIF Individual beneficiary farmers	1. A Voucher Management Agency 2. Agricultural inputs including improved seed and planting materials and storage materials
Component 2: Preparation of Agricultural Water Management Investment (US\$8million)	MAAIF	1. Feasibility studies and detailed designs for the irrigation schemes
Component 3: Market Linkages, Post-harvest Handling, Storage and Value Addition (US\$40 million)	MAAIF Farmers' organizations	1. Rehabilitation of market access roads 2. Refurbishment of warehouses 3. TA for strengthening farmers' organizations- Short term
Component 4: Project Management and Capacity Building for Policy, Regulatory, and ICT functions of MAAIF (US\$15 million)	MAAIF	1. Agricultural Information Platform 2. Recruitment of project staff to work with DLGs 3. TA for baseline and MTR studies 4. TA to support strengthening of regulatory framework 5. Motor vehicles

71. **Applicable Guidelines:** Procurement under the project will follow the *Guidelines: Procurement under IBRD Loans and IDA Credits*, dated January 2011 and revised in July 2014, and *Guidelines: Selection and Employment of Consultants by World Bank Borrowers*, dated January 2011 and revised in July 2014 as stipulated in the Financing Agreement.

72. **Use of National Procurement Procedures:** All contracts procured following National Competitive Bidding (NCB) and other lower procurement procedures such as Shopping, may follow the national public procurement law (the Procurement and Disposal of Public Assets Authority (PPDA) Act, 2003) and attendant regulations. These procedures were reviewed by the Bank and found acceptable, except for the following provisions, which will not be applicable under this project:

- (i) Domestic preferences shall not apply under NCB;
- (ii) The charging of fees for dealing with bidder complaints at procuring entity level shall not be permitted;

- (iii) Firms or individuals debarred or suspended by the Association shall not be eligible (in addition to firms or individuals suspended by PPDA);
- (iv) Disqualification of Bidders for not purchasing the bidding documents from the Recipient shall not apply;
- (v) Paragraph 6 (1) (b) of the Fourth Schedule of the PPDA Act (restriction on contract amendments to an aggregate amount of twenty-five (25) percent of the original contract amount) shall not apply;
- (vi) Regulation 48 of the PPDA Regulations¹⁹ (on rejection of a bid submitted by a bidder who obtained the bidding document directly from the procuring and disposing entity) shall not apply; and
- (vii) Regulation 53 (9) of the PPDA Regulations²⁰ (restriction on the use of bid securing declarations to restricted domestic bidding and quotations procurement) shall not apply.

73. Under the proposed project, procurement processing shall comply with the national approval system in addition to the World Bank guidelines, except where the two conflict, in which case the World Bank guidelines take precedence. Specifically, the Contracts Committees shall perform their oversight functions at every key procurement stage as required by the PPDA Act, and contracts shall be subjected to the Solicitor General's clearance where applicable.

74. **Procedure for Shopping:** Shopping shall follow the Quotations Procurement Method procedures as defined in the PPDA Act and attendant regulations. These procedures were reviewed by the Bank and found satisfactory subject to the exceptions under para 66 above.

¹⁹ Public Procurement and Disposal of Public Assets (Rules and Methods for Procurement of Supplies, Works and Non-Consultancy Services) Regulations, 2014 (under section 96 of the PPDA Act), dated March 3, 2014.

²⁰ See footnote above.

Table A3.5: Procurement thresholds to be applied in the Procurement Plan (PP)

Expenditure category	Contract value threshold (US\$)	Procurement method	Contracts subject to Prior Review
1. Works	US\$10,000,000 and above	ICB	All contracts
	Below US\$10,000,000	NCB	As specified in PP
	Below US\$100,000	Shopping	None
2. Goods	US\$500,000 and above	ICB	All contracts
	Below US\$500,000	NCB ²¹	As specified in PP
	Below US\$50,000	Shopping	None
3. Consulting services ²² and training	With firms above US\$300,000	Quality and Cost Based Selection	All contracts
	With individuals above US\$100,000	Individual	All contracts
	With firms up to US\$200,000	Qualifications/other	None
	With individuals up to US\$100,000	Individual	None
4. Nonconsulting services	US\$500,000 and above	ICB	All contracts
	Below US\$500,000	NCB	As specified in PP
	Below US\$50,000	Shopping	None
5. All types of contracts	All contracts	Sole source / direct contracting and ToRs	As specified in PP ²³

²¹ Where the goods are not locally available, ICB may be applied.

²² A shortlist of consultants for services estimated to cost less than US\$300,000 equivalent per contract may consist entirely of national consultants in accordance with the provisions of paragraph 2.7 of the Consultant Guidelines.

²³ Consultancy services estimated to cost below US\$5,000 equivalent will not be subject to prior review by the Bank subject to their inclusion in the agreed Procurement Plan.

Procurement Strategy, Risks, and Mitigation Measures

75. **Voucher Management Agency:** The main procurement under Component 1 shall be a large contract for a VMA to be hired at the national level. The VMA will be responsible for administering and managing the-Voucher scheme and its contract is therefore important. The VMA will be responsible for (i) identification and training of farmers; (ii) provision of e-Vouchers and administration of redemption; (iii) accreditation and management of providers of inputs nationwide, etc. As this is the first time such an agent will be hired in Uganda at this scale, there are currently no known providers locally, although providers exist in other countries (e.g., for the fertilizer program in Nigeria). It is likely that several firms may form a consortium to provide the service. To ensure adequate response, the invitation will be widely publicized. The VMA will be procured as a management service, so the standard bidding document for management services will be adapted for this contract. Given its importance for the project, it is critical that the VMA’s hiring is expedited. Other risks associated with hiring the VMA are indicated below under MAAIF, but Table A3.6 summarizes the key risks and mitigation measures:

Table A3.6: Risks and mitigation measures associated with the VMA

Risk factor	Risk	Mitigation measure	Timing and responsibility for implementation
Procurement cycle management	Delays in hiring of the agency lead to downstream delays in project implementation	Commence the procurement prior to project effectiveness under the ATAAS	MAAIF
Market	Poor response from qualified bidders given the complexity and scale of the contract	Wide advertising of the procurement to improve potential bidder response	MAAIF, during procurement process
Staffing	Insufficient experience and staffing in MAAIF to define the requirements and manage the procurement and supervision of the VMA	Hire an advisor with international experience in establishment of similar vouchers to support definition of requirements and procurement and management of the VMA, including possible market stimulation among bidders	Prior to effectiveness, MAAIF

76. **Agricultural Inputs:** Under Component 1, individual beneficiary farmers shall procure agricultural inputs. Individual farmers will receive a three-year diminishing matching grant *and* shall make their contribution which, together with the matching grant, shall be used to procure the inputs. The initial matching grant per farmer is estimated to be US\$75 in the first season and less thereafter. The matching grant shall be delivered by way of e-Vouchers, using the system currently under design and expected to be implemented under the project. Therefore, provision of the matching grant and procurement of the project-supported inputs shall be preceded by rollout of the e-Voucher system. Farmers will procure these inputs

themselves from accredited dealers following informal shopping and/or direct contracting. The main risks and mitigation measures are summarized below in Table A3.7:

Table A3.7: Risks and mitigating measures associated with purchase of agricultural inputs

Risk factor	Risk	Mitigation measure	Timing and responsibility for implementation
Lack of clarity of the procurement process	Insufficient experience of some farmers with procurement of some inputs, leading to exploitation by providers	Basic training on the procurement aspects will be provided to farmers as part of the training prior to receipt of e-Voucher	Prior to provision of e-Vouchers
Market	Insufficient availability of quality inputs given the increasing volumes purchased annually	Support to inputs shall be phased by cluster and commodities to allow gradual growth, enabling input providers to increase their production to meet demand Predecessor project under implementation shall support deliberate actions in the preceding periods under subcomponent 1.1 to increase input production and availability Timely provision of aggregated demand information to providers will enable them to plan production	As part of project design As part of project design Annually
Pricing	High purchase prices by farmers due to nonavailability of price information or overcharging by input dealers	MAAIF will provide price information to farmers to guide their purchase of items Accredited farmers will be required to always publicly display the price of inputs as an accreditation condition e-Voucher system will monitor prices at which the inputs are supplied	Seasonally prior to planting period Throughout implementation
Fraud	Collusion between providers and farmers to defraud the e-Voucher system, leading to leakages	Monitoring by cooperatives and providers will be promoted by penalizing the entire group when member farmers are involved in fraud; similarly, providers involved in fraud will be discredited	Throughout implementation

77. **MAAIF:** All national-level procurement will be done by MAAIF. The volume of procurement is expected to be high, so proper planning is needed to ensure that the various items are properly synchronized. The items to be procured are readily available, with sufficient bidders to generate adequate competition for both consultants and goods.

78. MAAIF has a long established Procurement and Disposal Unit and a Contracts Committee that adjudicates procurement. The Unit has participated in procurement under IDA-financed projects. The main risks are: (i) delayed preparation of procurement plans and initiation of procurement, leading to delays in completion of procurement; (ii) lack of a reliable system for monitoring progress on procurement, with available tools such as the Procurement Performance Monitoring System (PPMS) not being used; (iii) inadequate technical staff to support procurement – MAAIF is generally understaffed, with over 40 percent of positions vacant; (iv) inadequately prepared bidding documents with qualification requirements not properly completed and evaluation inconsistent with the published criteria in some cases; and (v) inadequate staff in the Procurement and Disposal Unit to support the significantly increased procurement volumes, with multiple IDA-financed projects now in MAAIF, and inexperience with complex procurement. The detailed risks and mitigation measures are indicated in Table A3.8 (see below).

Table A3.8: Risks and mitigation measures associated with MAAIF

Risk factor	Risk	Mitigation measure	Timing and responsibility for implementation
Internal manuals and clarity of the procurement process	Insufficient practical experience among the Procurement and Disposals Unit and the Contracts Committee, leading to delays or wrong implementation	Prepare manual to elaborate procurement arrangements as part of project preparation as a condition of project effectiveness	Prior to effectiveness / MAAIF
Staffing	Inadequate staff in the Procurement and Disposals Unit to support the significantly increased and complex procurement volumes with multiple projects Inadequate experience of existing staff in complex procurement	MAAIF will hire a Procurement Specialist and a Procurement Assistant to conduct project procurement	Prior to effectiveness / MAAIF
Procurement planning and procurement oversight	Inadequate oversight on procurement and monitoring of progress against plan, leading to delayed procurement and implementation	Dedicated Procurement Specialist will focus on this. In addition Project Coordinator will monitor procurement progress monthly	Throughout implementation
	Delayed preparation of procurement plans and initiation of procurements, leading to delayed procurement	Procurement Plan will be prepared by the end of appraisal and updated annually	Done
	Delays in irrigation component period, causing failure to complete implementation during project period given the limited slack	Advance procurement of some critical packages as well as close monitoring of procurement and implementation will minimize slippages	Through implementation
	Delayed approvals at Contracts Committee given the significantly increased volume of procurement	MAAIF will establish a dedicated Contracts Committee responsible for adjudication of procurement under IDA-financed projects	Prior to effectiveness / MAAIF
Procurement cycle management	Insufficient technical staff to support procurement, leading to poor-quality bidding documents, providers, and contract management as well as delayed implementation	Additional technical staff will be hired as part of the PCU to support implementation, including a Project Coordinator, Agronomists, Program Officers, Engineers, and ICT Specialists	As per Procurement Plan, with critical ones coming prior to effectiveness
Governance, fraud and corruption	Falsification of bidder qualifications and bank guarantees, leading to hiring	Due diligence will be conducted to verify bidder qualifications prior to contract award; guarantees will be	Through implementation / MAAIF

Risk factor	Risk	Mitigation measure	Timing and responsibility for implementation
	of unqualified providers	verified prior to release of funds	

79. **Farmers’ Organizations** are expected to conduct procurement under Component 3. They will receive matching grants that may be used for refurbishment and expansion of storage facilities. The project will support the establishment of these organizations, so they are not expected to conduct any procurement prior to the MTR. The arrangements for procurement will therefore be defined once the farmers’ organizations have been established or strengthened.

80. **Procurement Plan and Procurement Packages.** A procurement plan is being finalized by MAAIF.

81. **Frequency of procurement supervision.** See Table A3.9.

Table A3.9: Frequency of ACDP procurement supervision

Phase	Frequency
Supervision / Implementation Support	6 months
Post Review	12 months
Post Review (% of contracts)	10%

D. Environmental and Social Safeguards

82. **Environmental safeguard.** The project is proposed to develop plans to expand and develop selected gravity irrigation schemes in lowlands totaling 6,000 ha of irrigated land in the 10 targeted districts in cluster 2 (Iganga, Bugiri, and Namutamba), cluster 3 (Pallisa, Tororo, and Butaleja), cluster 5 (Soroti and Serere), cluster 6 (Amuru and Nwoya), cluster 7 (Lira), and cluster 10 (Hoima). The exact locations for the new irrigation schemes have not yet been selected, though they are expected to fall within the above-listed 10 districts, where rice production needs to be advanced. In some cases, a scheme could lie astride two districts. The project will prioritize expansion of existing schemes (about 1,000 ha) and development of small-scale (about 3,000 ha) and medium-scale (about 2,000 ha) schemes, and will not support planning for construction of large-scale irrigation structures to minimize the extent of environmental and social impacts. In general, plans for the development of lowlands gravity irrigation schemes will focus on the following infrastructure: diversion weir from the river, main canal from the weir to the irrigated area, distribution network canals, drainage network, internal road, protection dykes (in case of flooding risk), and land levelling. Dams are not required because the irrigation schemes will target permanent streams/rivers with enough water for irrigation and downstream use.

83. No prefeasibility or full feasibility/engineering design studies have been undertaken for the target schemes. Thus Environmental and Social Impact Assessments (ESIAs) and Resettlement Action Plans (RAPs) shall be undertaken when the scope of the proposed expansion or new development is outlined in the prefeasibility studies for each location. Water for irrigation will be abstracted from the Nile basin watershed, which is shared by 11 countries

(Burundi, Democratic Republic of Congo, Egypt, Eritrea, Ethiopia, Kenya, Rwanda, South Sudan, Sudan, Tanzania, and Uganda). Quantification of the modified water balances and the overall impact on Nile basin resources will be carried out as part of the Catchment Management Plans (CMPs) being implemented by MWE with the support of the Water Resources Management and Development Project (WMDP-P123204).

84. Some of the associated negative environmental and social impacts include: water abstraction on downstream users; loss of wetland habitat as a result of the irrigation infrastructure needed; point and nonpoint pollution of water sources; soil erosion and siltation; and water and land acquisition and their land-use-related conflicts. Most of these impacts are minor or of low-intensity, site-specific, and thus relatively straightforward to manage with participation of LGs and WUAs. Infrastructures like dams will not be considered as they could flood properties and settlements and affect the biodiversity of ecosystems.

85. The project will support rehabilitation of 1,700 km of farm access roads. The project will not support opening up of new roads but rather will concentrate on improving existing access roads. The priorities for road investment at district level will be based on the magnitude of agricultural production for respective commodities. Access road works will include reshaping (slight earthworks), provisions for culverts and small bridges, and limited lateritic lining to treat critical points as needed. Road design could include drainage ditches where longitudinal slopes are accentuated. The likely environmental impacts are expected to be minor given the low mechanization of road works involved.

86. The market infrastructure under Component 3 will include rehabilitation and/or construction of storage facilities/structures (a network of warehouses and feeder stores) mainly at the ACCE level of 500 MT each. It has not yet been determined whether central warehouses of a larger capacity (5,000 MT) are needed.

87. Project implementation will therefore be spread throughout the country, specifically covering the following districts: Masaka, Mpigi, Rakai, Iganga, Bugiri, Namutumba, Pallisa, Tororo, Butaleja, Kapchorwa, Bukwo, Mbale, Soroti, Serere, Amuru (including Nwoya), Gulu, Apac (including Kole), Oyam, Lira (including Dokolo), Kabarole, Kamwenge, Kasese, Kyenjojo (including Kyegegwa), Mubende, Kibaale, Hoima, Masindi, Kiryandongo, Ntungamo, Kabale, Bushenyi, Isingiro, Nebbi, Arua (including Nyadri), and Yumbe.

88. The targeted crops are not traditional cash crops. These crops comprise the bulk of the food crops and women-managed crops in communities where they are produced. It is therefore important that the project recognizes the balance between trade and home consumption as well as the role of women in production of the strategic commodities for export.

89. To address the potential environmental and social impacts, the project prepared and disclosed both an Environmental and Social Management Framework (ESMF) and a Resettlement Policy Framework (RPF) to guide the preparation and implementation of site-specific plans. The ESIA (environmental and social impact assessment) and/or ESMP (environmental and social management plan) and RAPs will be prepared and disclosed once sites have been selected and feasibility studies are being undertaken.

90. **Borrowers' Institutional Capacity for Safeguard Policies.** MAAIF will be the main implementing unit of this project at the national level, working in liaison with LGs in the

respective districts. MAAIF does not have environmental and social management specialists. Since agricultural activities contribute cumulatively to environmental degradation in Uganda, MAAIF should have residential in-house capacity for environmental management. MAAIF has agreed under the proposed PCU to create in-house positions for environmental and social development specialists to handle safeguard issues. The LGs have District Environment Officers, District Agricultural Officers, District Community Development Officers, and District Gender Officers, some of whom are involved in the current Bank-financed ATAAS and NUSAF-2 projects. These officers shall be involved in the implementation of safeguard policies. However, the capacity of both the NPSC and the respective district and sub-county staff needs to be strengthened through hands-on training on safeguard requirements as part of the start-up phase of the project. Environmental and social management monitoring will form part of the regular project progress reports.

Table A3.10: Safeguard policies triggered under ACDP

Safeguard policy	Triggered (Y/N)	Explanation
Environmental Assessment (OP/BP 4.01)	Y	Components 1 and 3 involve irrigation and infrastructure rehabilitation activities (roads, irrigation-related infrastructure, grain storage, and processing facilities). These activities have a potential of causing environmental impacts, which should be assessed and mitigated. However, most of the environmental impacts will be of low-intensity, minor, site-specific and relatively straightforward for farmers to manage, with guidance from respective LGs. The specific location/site and scope of all project components are not yet known. Therefore, an ESMF for the whole project was prepared, consulted upon, and disclosed on December 2, 2014 in-country and December 11, 2014 in the Infoshop. Depending on the scope and environmental screening criteria in the ESMF, project/site-specific ESIA/ESMPs will be prepared. The ESMF includes an examination of potential cumulative and induced impacts.
Natural Habitats (OP/BP 4.04)	Y	The watershed-related project activities will be carried out in wetlands, rivers, and lakes. These habitats may be affected by the proposed project. The project will not support activities that lead to clearance of any protected ecosystem or critical habitats. All natural habitats that may be affected were addressed under the ESMF and shall subsequently be assessed under the ESIA and management of any potential impacts included in the respective subproject ESMPs.
Forests (OP/BP 4.36)	N	By design, the project will not support and/or involve any significant forestry conversion/degradation activities.
Pest Management (OP/BP 4.09)	Y	Under the proposed project, improved and increased agricultural activities and production may result in increased use of pesticides and thus in associated environmental impacts. Therefore, a Pest Management Plan (PMP) was prepared, consulted upon, and disclosed prior to appraisal.
Physical Cultural Resources (OP/BP 4.11)	Y	This policy may be triggered by the civil works-related activities; thus the procedure of handling chance finds was included in the ESMF.
Indigenous People (OP/BP 4.10)	N	There are no indigenous people in the project area.
Involuntary Resettlement (OP/BP 4.12)	Y	The project may involve land acquisition leading to involuntary resettlement and/or restrictions of access to resources or livelihoods. Since the exact locations and potential adverse localized environmental and social impacts of subproject activities cannot be determined prior to appraisal, the project prepared, consulted upon, and disclosed an RPF.
Safety of Dams (OP/BP 4.37)	N	This policy is not triggered because the project will not involve construction of dams. Dams are not required because the irrigation schemes will target permanent streams/rivers with enough water for irrigation and downstream use. The irrigation schemes component will involve expansion of two existing schemes (irrigating 1,000 ha) and development of new schemes (to irrigate 5,000 ha). Doho irrigation scheme has an excavation water reservoir volume of 400,000 m ³ , 1.6 M deep. An O&M manual for each irrigation scheme shall be prepared during technical designs. The O&M manual shall include safety issues among others. FAO's manual on irrigation O&M will be used to ensure scheme sustainability.
Projects on International Waterways (OP/BP 7.50)	Y	This policy is triggered because the project will support expansion and development of irrigation schemes in the Lake Kyoga basin and river tributaries that drain into the Nile, an international waterway shared by 10 countries (Burundi, DRC, Egypt, Eritrea, Ethiopia, Kenya, Rwanda, Sudan, Tanzania, and Uganda). Notification of the riparian states will be done.
Projects in Disputed Areas (OP/BP 7.60)	N	There are no known disputed areas in the project areas.

Social Issues and Safeguards

91. **Land acquisition, ownership, and post-conflict impact.** ACDP is expected to have significant positive impact on social and poverty conditions by increasing the productivity and production of the selected commodities as well as promoting smallholder farmers. The project may involve acquisition of land required for expansion of irrigation canals and infrastructure under Component 2. The project therefore triggers the Bank policy on involuntary resettlement (OP/BP 4.12). A Resettlement Policy Framework (RPF) was prepared and disclosed to address such land acquisitions and displacements if any, related to irrigation and other infrastructure under Components 2 and 3 for which locations are not yet defined. Site-specific RAPs will be prepared during project implementation and will benefit from both location-specific land studies and social assessments. The land study will provide for insight into land ownership status including occupants, users, claimants, etc., and identify potential issues likely to arise out of land taking for project activities based on historical and other factors. The study will also propose recommendations for addressing the likely challenges related to the sharing of scarce resources like land and water. Further, site-specific social assessments will be undertaken during project implementation and will include gender analysis to provide for information on the roles of men and women in agriculture-related activities and how they might be impacted, as well as their proposals for active and sustainable participation and benefit sharing in the proposed project. The studies will be undertaken in tandem with the prefeasibility studies after project effectiveness in year 1.

92. RAPs consistent with national and Bank standards will provide step-by-step guidelines to deal with land acquisition issues, compensation, and livelihood restoration.

93. **Gender.** The project concept and proposal development provides a clear analysis of key issues affecting several categories of beneficiaries of ACDP, such as men, women, and youth, and the disproportionate roles of women and youth in field work on farms. In addition, gender targeting of activities, approaches, and monitoring will take into account the gender challenges and specific impacts in increasing the selected commodities' agricultural productivity. The gender mainstreaming will explore incorporating affirmative actions in activities including (but not limited to) training, financial access, land access and use (on the irrigation schemes), access to inputs, and all other component areas. MAAIF through this project will consider designing interventions that bring women on board for equitable empowerment and poverty reduction by increasing their participation and involvement in market-oriented agriculture given their already vulnerable position in access to and ownership of production assets. The Gender Focal Officer in MAAIF will be instrumental in supporting these assessments and mainstreaming.

E. Monitoring and Evaluation

94. **Reference surveys** will allow project benefits and impacts to be assessed and include: a baseline study, a mid-term review, and an end-of-project evaluation. They will be conducted with the same survey methodology as the Uganda Census of Agriculture 2008/2009, using a double-difference approach allowing sampling target and control groups (counter-factual) to

generate panel data concerning area, yields, and production as well as net revenues at district level and for each commodity.

95. **Preliminary baseline values** were estimated using secondary sources, such as the Uganda Census of Agriculture 2008/2009, which provides total area and total production of cassava, maize, rice, and beans at the district level, and other sources. Baseline yields for each commodity except coffee were derived from the census data by calculating total production in the 12 clusters. A detailed baseline survey is planned in 2015 (confirmation awaits reallocation of ATAAS funds) before the project starts. The detailed baseline survey will include indicators directly related to the participating households (yield, production, net revenue) and to an overall level. The baseline in 2015 will be conducted in two stages. First, it will be start by using secondary sources, such as the ATAAS farmer household survey carried out by Uganda Bureau of Statistics (UBOS) from May to August 2014. This survey includes both ATAAS beneficiaries and non-beneficiary households (among other things for rice, beans, and maize). ACDP will use the overall data. MAAIF M&E will provide a precise definition of the indicators (districts, commodity) to UBOS to process existing data. This includes, among other things, yield, production, and net revenues in smallholder farms. Some values will also be provided by national partners (e.g., the Uganda Coffee Development Association (UCDA)), especially regarding coffee. Second, a specific survey for the capture of missing values (especially intermediate outcomes for Components 1 and 3) will be conducted by the Statistics Division of MAAIF's Planning Department, with samples in each district. MAAIF's statistics system is under construction and this survey will be performed jointly with UBOS. The baseline values will be consequently revised after this survey. Milestones and annual targets for each indicator will also be revised in compliance with the revised baseline values. The head of the M&E Division will supervise this baseline finalization jointly with the Statistics Division and will ensure the linkage between ACDP's M&E and ATAAS (see below). A short-term consultancy could be provided for the design of the baseline and related surveys to support the M&E Division.

96. **The mid-term review and project-end evaluation** will be conducted through external consultancies. Specifically, mid-term review in year 3 will provide analysis about progress in terms of benefits and expected impacts, and will possibly lead to some adjustment measures in the project design. In particular, special emphasis will be given to the future implementation of irrigation schemes following the prefeasibility and feasibility studies conducted in the first three years.

97. **Monitoring results and mainstreaming knowledge into implementation processes.** Overall, M&E will: (i) generate information on progress, processes, and performance against indicators; (ii) analyze and aggregate data generated at various levels (district, cluster, national) to track progress, monitor process quality, impact, and sustainability, and identify bottlenecks for quick resolution; and (iii) document and disseminate "horizontally" key lessons to stakeholders across the clusters and vertically to decision makers at MAAIF for adjustment. The system will ensure that: (i) clear responsibilities and procedures for M&E are established; (ii) appropriate M&E capacity building for all stakeholders is emphasized from the start and throughout implementation; and (iii) it functions in a timely manner. The M&E reporting formats will be in line with the sector M&E manual and guidelines. Special emphasis will be given to report ACDP results to assess effectiveness in regards to the PDO and ensure a result-oriented management. Intermediate outcomes will be mostly captured in

the MIS whereas outcomes at the PDO level will be assessed in specific surveys. Special emphasis will be given to capture data disaggregated by gender and age.

98. **ACDP M&E preparation.** In compliance with the proposed phasing, the first stage of the M&E implementation process will involve: (i) a diagnosis of the M&E stakeholders (ACCEs, suppliers, national partners, districts, MAAIF) and of their internal capacities in M&E, as well as identification of their strengthening/capacity-building needs; (ii) design of a Project Monitoring Plan (PMP) and ACDP M&E manual as well as standardized forms; (iii) design of the training plan; (iv) likely the first training for MAAIF M&E; (v) training of extension officers on the forms (data collection, use of ICT devices); and (vi) design of ACDP'S MIS in the same architecture as the ATAAS MIS. Special emphasis will be given to the standardization with forms and standards (e.g., harmonized unit for collected data) of MAAIF's Agriculture Planning Department.

99. **Institutional arrangements for results monitoring.** The project M&E system will be embedded in the government's existing M&E structure. All agencies involved in project implementation will participate in data collection, compilation, and use. Some stakeholders will be supported to play their role effectively. Mechanisms from data collection to analysis are presented in Figure A3.2 (at the end of this annex). As mentioned, ACDP M&E will be linked to the existing agriculture M&E mechanisms. Nevertheless, an M&E specialist and an M&E assistant will be recruited in the PCU to ensure ACDP M&E operationalization. The roles and responsibilities will be performed in the frame of specific MoUs and contracts between MAAIF and partners at national and district levels. Their roles are shown in Table A3.11:

Table A3.3: Role and responsibilities in the MIS and ACDP M&E

Stakeholder	Role
National level	
Project Steering Committee	- Annual planning
M&E Working Group (WG) of MAAIF, led by the Assistant Commissioner M&E of the Planning Department	<ul style="list-style-type: none"> - Provide some guidance to ACDP M&E - Ensure the harmonization of ACDP M&E with MAAIF M&E standards and with the Agriculture Statistics System (under construction) - Check the contribution of ACDP results framework to DSIP indicators
Focal point / MAAIF M&E division	<ul style="list-style-type: none"> - Overall supervision of ACDP M&E and consistency with MAAIF M&E standards - Linkage with the Agriculture Statistics system and Statistics Department - Measure contribution to DSIP outcomes
NMSP	<ul style="list-style-type: none"> - Annual planning - Guidance to clusters based on quarterly and annual national reports
DCR and DFD focal points	- Control consistency of quarterly and annual district and national reports
M&E specialist	<ul style="list-style-type: none"> - Compilation and consolidation of data from different sources - Quarterly and annual (cluster and national) reporting, including printouts from MIS - Provision of analysis concerning progress - Control of MIS (administrator access) - Participation in CMSP, NMSP, and PSC meetings - Monitoring of missions to the field
M&E assistant	- Support to the M&E specialist in data compilation and reliability control, reporting, and field missions
Focal points in national partners' organizations	- Supply of national data through harmonized database
Cluster level	
CMSP	<ul style="list-style-type: none"> - Annual planning - Guidance to districts based on quarterly and annual cluster reports
District level	
M&E focal point (DPC and/or DAO) - 1 per district	<ul style="list-style-type: none"> - Quarterly and annual cluster and national reporting - Control of MIS (administrator access) and reliability of data - Maintenance of hard copies of data - Data capture in MIS regarding outputs/outcomes in Component 2 - Supervision of subcounty Crops Extension Officers - Data capture in MIS in the absence of functional ICT (administrator access)
District Water Officer in LG	<ul style="list-style-type: none"> - Collection of data regarding irrigation scheme outcomes - Dissemination of data to M&E focal point at district level
Sub-county level	
Subcounty Crops Extension Officer (ongoing recruitment): 1 per subcounty	- Data collection (manual with standardized forms and digital with ICT devices)
ACCEs	- Supply of data to subcounty officers
Farmers	- Supply of data to ACCE or subcounty officers

100. **Information communication technology (ICT) in M&E of ACDP.** The Agricultural Information Platform or management information system (MIS) for the electronic capture and storage of project data, as envisioned in ATAAS design, is not operational. The platform, once operational, will be useful for monitoring ACDP's results.

101. In its design, the ATAAS MIS will be adapted to capture data related to ACDP's year 0. It will include specific inputs sheets and printouts, using the ATAAS methodologies. The focus will be on: (i) monitoring the inputs and outputs concerning e-Voucher distribution (volume of distribution, number of beneficiaries per district and commodity); and (ii) specific monitoring of outcomes for a sample of voucher beneficiaries (yield/household, production/household, income/households).

102. A computerized ACDP MIS will be designed in year 0, incorporating the lessons learned from the ATAAS MIS deployment. The ATAAS MIS deployment was made possible through the reprogramming of funding following the MTR, and was specifically intended as a phased and agile operational implementation using cloud-based, off-the-shelf solutions. The learning results of each phase (e.g., clarified user needs) are incorporated into the next phase. Due to this preliminary preparation, ACDP'S MIS will be operational at the start of ACDP implementation. Linkages with the ICT strategy will be focused at the data collection and storage level. Two options must be considered with respect to the linkages with the ICT process (not yet implemented):

1) **Option 1:** The MIS is in place before the ICT system starts running. In this case, data collection and entry at subcounty level will be manual in standardized sheets and District Extension Officers will be in charge of the manual data capture in the MIS.

2) **Option 2:** The MIS is in place after or jointly with the ICT system. In this case, data collection and entry at subcounty level will be both manual (to keep hard copies for control) and digital. Data will be directly embedded in the MIS without further capture in district-level MISs.

103. Under either option, the MIS will include specific modules of monitoring for: activities based upon the annual work plan, financial monitoring, the Procurement Plan, inputs and outputs at the field level and those of national partners, and intermediate outcomes. Some data will be captured from partners' databases and directly inserted in ACDP'S MIS.

104. Two levels of MIS control are established with administrator access to the system: (i) at the district level, by the M&E focal point in charge of quarterly and annual reporting; and (ii) at the national level, by the M&E specialist in the PCU. Printouts with consolidated data on outputs and outcomes for each commodity will be generated from the MIS at the district, cluster, and overall level. ACDP'S MIS should be able to directly transfer data to the Agriculture Statistics System.

Table A3.12: ACDP reporting table

Document	Transmitter	Frequency	Recipients													
			National planning forum and NDP secretariat	Steering Committee	NMSP	PS MAAF	DCR	DFD	Planning Dpt	M&E/PCU	National partners	CMSP	ACE	Focal Point M&E district (DAO)	Extension officers	
Annual sector performance report	Assistant Commissioner - M&E WG / Planning Dpt	12 months														
M&E WG quarterly report	Assistant Commissioner - M&E WG / Planning Dpt	3 months														
ACDP annual report - including the updated results framework coming from the MIS	M&E specialist / PCU	12 months														
ACDP 6-month report - including the updated outputs achievements coming from the MIS	M&E specialist / PCU	6 months														
ACDP quarterly report - including the updated outputs achievements coming from the MIS	M&E specialist / PCU	3 months														
District ACDP national progress report	M&E Focal Point District	12 months														
District ACDP quarterly progress report	M&E Focal Point District	3 months														
Data sheets - net revenues, yields, production in a sample	Extension officers	3 months														
Quarterly data base printouts	ACCE	3 months														

M: Main recipient
C: Copy

105. **Other M&E activities.** The project will manage occasional thematic assessments/evaluations, staff training, technical audit of rural infrastructures, case studies, and knowledge sharing fora, all undertaken by external consultants selected on a competitive basis. Specific studies could be conducted concerning the e-Vouchers and ICT aspects. An intermediate assessment of the outcomes (yield, % of adoption) regarding the e-Voucher

distribution strategy (inputs in Component 1; on-farm storage in Component 3) should be carried out at the end of the pilot phase. Specific studies could compare the benefits and impacts in terms of net revenue increase in different smallholder farms (targeted for one/two/three commodities). This project could also be an opportunity to develop the M&E guidelines/manual for the sector.

106. Some specific surveys will be directly embedded in the components, which will provide information for M&E: e.g., surveys will be conducted for the e-Voucher distribution in Component 1, for the performance assessment of the irrigation schemes after one year, and for the assessment of ACCEs' capacity upgrading (score cards). A survey should also be conducted in a sample of smallholder farms regarding financial data coming from farm accounts.

107. **Capacity building.** A diagnosis will be conducted to assess the capacity of each stakeholder in M&E and data collection, processing and storage. Particular emphasis will be given to: (i) at national level, MAAIF M&E staff, and national partners (UCA, NARO, UCDA); (ii) at district and subcounty levels, LG staff, inputs suppliers, ACCEs, and district and subcounty extension officers (who should be set up in place of NAADS officers). Further TA will cover topics such as: (i) MIS use; (ii) use of standardized forms; (iii) performance reporting tools; (iv) facilitation and participatory M&E; (v) general computer skills; and (vi) use of ICT devices once in place. Regarding ACCEs' capacity building, special emphasis will be given to data collection among members as well as data coming from farm accounts (economic and financial data) to assess net revenues and benefit/cost ratios.

108. **Knowledge management.** From year 3, specific studies and analysis will feed the knowledge management system. Relevant experiences will be capitalized and diffused towards partners at national and district levels through workshops and specific outputs (leaflets, reports, and media communication).

109. **Risk assessment concerning ACDP M&E implementation.** Risks that could reduce ACDP's M&E performance include: (i) insufficient stakeholders' capacity (particularly within ACCEs); (ii) only a sample of beneficiaries (likely less than 10 percent) monitored due to limited staff at field level (one District Crops Extension Officer and around seven subcounty officers at district level); (iii) the new extension system from 2015 embedded in MAAIF in place of NAADS (not yet implemented); (iv) additional delays in ATAAS MIS implementation during the pilot phase; (v) delays in the implementation of the Food and Agriculture Organization (FAO) Statistics System, including ICT initiatives, though human resources are now in place in the Statistics division of MAAIF's Agriculture Planning Department; (vi) and failure to conduct the Uganda National Panel Survey (UNPS)²⁴ annually as planned. Finally, UBOS is overwhelmed with requests for data from different sectors, so

²⁴ The UNPS program receives financial and technical support from the Government of Netherlands and the World Bank Living Standards Measurement Study – Integrated Surveys on Agriculture (LSMS-ISA) project.

there could be some delays in collecting statistics, making it difficult to compile comprehensive information on each indicator.

Table A3.13: Planned M&E activities for ACDP

Year 0 (next 18 months)	During ACDP implementation period from July 2016
M&E during the pilot phase implementation	ACDP M&E
Baseline establishment: <ul style="list-style-type: none"> - Capture of baseline values regarding outcomes from ATAAS survey: request to UBOS for these values with precise description of commodities and districts - Specific survey for the values of the intermediate outcomes for Components 1 and 3 through Statistics division of MAAIFS Planning Department, jointly with UBOS 	Further training for partners, ACCEs, as well as retraining program for MAAIF and LG staff
Insertion in ATAAS MIS of specific inputs sheets and printouts, using the ATAAS methodologies and data capture from Implementation agency database <ul style="list-style-type: none"> - Monitoring of the inputs and outputs: e-Voucher distribution, volume of seeds, beneficiaries - Monitoring of the outcomes for a sample of e-Voucher beneficiaries: yield/household, production/household, income/households - Monitoring of the prefeasibility and feasibility studies, development of CMPs for irrigation (Component 2) 	Data capture and processing in MIS
Pilot phase quarterly and annual reporting by MAAIF M&E division	Annual planning
Assessment of the pilot phase year 0	Quarterly and annual reporting
	Strategic meetings of PSC, NMSP, CMSP
	Mid-term review in year 3
Preparation of ACDP M&E	Knowledge management
Capacity diagnosis concerning partners' database and internal M&E system as well as definition of needs in capacity building, supervised by MAAIF M&E division (consultancy)	Final evaluation
Design of PMP and manual as well as the standardized forms (M&E MAAIF, ATAAS), supervised by MAAIF M&E division (consultancy)	
Design of ACDP'S MIS, supervised by MAAIF M&E division (consultancy)	
Design of the training plan, supervised by MAAIF M&E division (consultancy)	
First training for MAAIF M&E and district focal point concerning MIS use, supervised by MAAIF M&E division (consultancy)	
Training of extension officers on the forms (data collection, use of the ICT devices)	
Recruitment of a M&E specialist in MAAIF	

Annex 4: Operational Risk Assessment Framework (ORAF)

Uganda: Agriculture Cluster Development Project (P145037)

Project Stakeholder Risks						
Stakeholder Risk	Rating	Moderate				
<p>Risk Description:</p> <p>Inadequate or ineffective ability to ensure and coordinate the participation of various stakeholders including private sector, farmers’ organizations, and other ministries.</p> <p>While MAAIF’s capacity requires strengthening, MAAIF was very successful in 2012 in putting together a new plan to operationalize the Agriculture Sector DSIP, involving 12 task teams, comprehensive stakeholder consultations and workshops involving around 1,000 people, and 22 action plans. Furthermore, as a direct outcome of this activity, MAAIF has worked on the concept of this project in consultation with DPs and stakeholders. As a consequence, there is a strong ownership of this project, not only at MAAIF but also at the stakeholder level.</p>	<p>Risk Management:</p> <p>The project will deliberately strengthen MAAIF and local governments’ capacity to coordinate the project. All key stakeholders will be consulted during project preparation for purposes of collective ownership and consensus. It is envisaged that a multistakeholder and multisectoral Project Steering Committee (PSC) will be instituted to provide overall oversight during project implementation. A series of training workshops will be held in the respective clusters, bringing together key government senior staff, as well as key stakeholder representatives.</p>					
	Resp:	Status:	Stage:	Recurrent:	Due Date:	Frequency:
	Both	In Progress	Both	<input checked="" type="checkbox"/>		CONTINUOUS
Implementing Agency (IA) Risks (including Fiduciary Risks)						
Capacity	Rating	High				
Risk Description:	Risk Management:					

<p>MAAIF is understaffed and has capacity limitations that could hinder project implementation. While these limitations are not insurmountable, they pose implementation risks in the short term and need to be mitigated against.</p> <p>It must be noted that MAAIF is already successfully handling/coordinating several projects with DPs by designating dedicated Ministry officers, such as coordinators and accounts staff. During the project, this capacity will be further institutionalized and strengthened. Further, most of the services and activities will be outsourced by design through competitive bidding and through partnerships with the private sector and farmers' organizations. Local authorities/governments already carry out projects and programs, in line with the decentralized nature of government in Uganda. Generally, they are often not properly briefed, trained, or funded. Under this project, a series of training events will be held in the respective clusters, bringing together key government senior staff as well as key stakeholder representatives.</p>	<p>A PCU will be established within MAAIF to manage the project. Adequate capacity will be put in place within the PCU to allow it to carry out its functions effectively. The project has provided for strengthening the critical capacities in MAAIF, farmers' organizations, and the private sector. Assessment of institutional safeguards, procurement, and financing aspects will be carried out to identify the capacity needs. In addition to the technical capacity, the project will enhance the private sector's financial capacity to deliver the anticipated services through bank guarantees and PPPs.</p>					
	Resp: Both	Status: In Progress	Stage: Both	Recurrent: <input checked="" type="checkbox"/>	Due Date:	Frequency: CONTINUOUS
Governance	Rating	High				
<p>Risk Description:</p> <p>The multiplicity of actors involved (public and private) and inter-ministerial collaboration could create confusion in the leadership and coordination, thereby affecting</p>	<p>Risk Management:</p> <p>The overall responsibility for implementation and coordination will be with MAAIF. However, a NPSC comprising representatives from the key stakeholders will be established. The NPSC will oversee project implementation and coordination of</p>					

project implementation and outcomes.	stakeholders.					
	Resp: Client	Status: Not Yet Due	Stage: Implementation	Recurrent: <input type="checkbox"/>	Due Date: 30-Jun-2016	Frequency:
	<p>Risk Management:</p> <p>GAC is a cross-cutting theme in the 2011-2015 CAAS in all new operations and the value for money agenda is supported across the portfolio. The recently developed data tracking mechanism provides Government with self-assessment tool for corruption and governance and identifies areas where key reforms to address governance have failed. This will help provide pointers for better governance arrangements in investment projects. Specific GAC plan will be incorporated into this project.</p>					
	Resp: Both	Status: In Progress	Stage: Both	Recurrent: <input checked="" type="checkbox"/>	Due Date:	Frequency: CONTINUOUS
Project Risks						
Design	Rating	Moderate				
<p>Risk Description:</p> <p>The proposed project deals with several commodities and thematic areas, as well as requiring effective partnerships</p>	<p>Risk Management:</p> <p>For detailed project design, a comprehensive needs assessment will be done through consultation with the relevant stakeholders and beneficiaries. A comprehensive</p>					

between the public and private sectors. Any distortion of markets at the local and regional levels may also affect achievement of the project objectives.	marketing strategy will be developed for promoting quality, value addition, and product diversification.					
	Resp: Client	Status: In Progress	Stage: Implementation	Recurrent: <input type="checkbox"/>	Due Date: 30-Jun-2017	Frequency:
Social and Environmental	Rating	Moderate				
Risk Description: Lack of adequate capacity and political will to implement social and environmental risk mitigation measures identified through the environmental and social management framework (ESMF) developed for the project could lead to a high level of residual impact from implementing project activities, or undermine project results if necessary safeguard measures are not fully implemented.	Risk Management: An ESMF will guide project implementation and preparation of specific environmental and social assessments. Necessary capacities will be developed through targeted training in relation to implementation of the ESMF. If well managed, the nature of proposed investment is not likely to pose significant social and environmental risks. The scope of project monitoring will include effectiveness of project social and environmental risk. MAAIF will recruit Environmental and Social Development Specialists.					
	Resp: Client	Status: In Progress	Stage: Implementation	Recurrent: <input type="checkbox"/>	Due Date: 30-Jun-2017	Frequency:
Program and Donor	Rating	Low				
Risk Description: Inadequate coordination and alignment of numerous donor-supported projects and programs in MAAIF could	Risk Management: The project is aligned to the DSIP and will seek involvement of other DPs and stakeholders in the preparation stage to ensure harmonization and coordination with other					

<p>lead to duplication of effort and/or reduce intervention effectiveness. However, regular dialogue and cooperation between MAAIF, the Bank, and other DPs already exists.</p>	<p>initiatives. The Bank is part of a donor working group in the agriculture sector that aims at harmonizing donor-supported interventions to avoid duplication and promote effective use of resources.</p>					
	<p>Resp: Both</p>	<p>Status: In Progress</p>	<p>Stage: Both</p>	<p>Recurrent: <input checked="" type="checkbox"/></p>	<p>Due Date:</p>	<p>Frequency: CONTINUOUS</p>
<p>Delivery Monitoring and Sustainability</p>	<p>Rating</p>	<p>Moderate</p>				
<p>Risk Description: Institutional difficulties and inability of the private sector to deliver the essential services envisaged in the clusters could negatively affect project outputs and outcomes.</p>	<p>Risk Management: The cluster stakeholder platforms and the PSC will continuously monitor the performance and interaction of the various actors and propose remedies during project implementation. The agricultural statistics unit of MAAIF will be strengthened and supported to establish benchmarks for each component of the project to facilitate measurement of progress and impacts during and after implementation. The project will strengthen and support capacity development in M&E.</p>					
	<p>Resp: Client</p>	<p>Status: In Progress</p>	<p>Stage: Both</p>	<p>Recurrent: <input checked="" type="checkbox"/></p>	<p>Due Date:</p>	<p>Frequency: CONTINUOUS</p>
<p>Other (Optional)</p>	<p>Rating</p>					
<p>Risk Description:</p>	<p>Risk Management:</p>					

	Resp:	Status:	Stage:	Recurrent:	Due Date:	Frequency:
				<input type="checkbox"/>		
Other (Optional)	Rating					
Risk Description:	Risk Management:					
	Resp:	Status:	Stage:	Recurrent:	Due Date:	Frequency:
				<input type="checkbox"/>		
Overall Risk						
Overall Implementation Risk:	Rating	High				
<p>Risk Description:</p> <p>Policy environment: In the past, MAAIF has been susceptible to unexpected and sudden changes of both policy and operational guidelines, which has been a serious impediment for effective action. However, in 2012, MAAIF has been very successful in putting together a comprehensive plan to operationalize the Agricultural Sector DSIP. As a direct consequence, there is a strong ownership of this project. This must be further strengthened and consolidated through a large number of informative and consultative workshops during project preparation, at local and national level. The national level workshops must include all senior representatives and officers involved in the agricultural sector including, the associated Ministers, Parliamentary Committee on Agriculture, MAAIF senior officials and key national stakeholders. Similar preparatory workshops must be held at the</p>						

respective clusters, combining the districts. Governance and corruption: Uganda has been experiencing abuse of resources in a number of projects due to poor governance and corruption. While the government, with support of development partners, is putting in place several measures, a clear GAC action plan will also be required for this project.

Private sector and producer participation: As the project is not based on free handouts, the economic incentives and regulations have to be gauged accordingly to ensure the economic participation of producers and the private sector in a healthy manner. Project design would support sharing of proper information, cluster coordination, and a more appropriate regulatory environment.

Annex 5: Implementation Support Plan
UGANDA: Agriculture Cluster Development Project (ACDP)

Strategy and Approach for Implementation Support

1. The strategy for successful implementation support (IS) of the proposed ACDP operation will focus on mitigating the risks identified at various levels and supporting risk management plans as proposed in the ORAF.
2. The IS strategy will comprise a number of critical review instruments to assess progress towards achieving the PDO and overall implementation progress and to effectively respond to issues and challenges as they arise. Such reviews will include among others: (i) joint reviews and implementation support missions conducted semi-annually and which will include other development partners (DPs), as appropriate; (ii) a mid-term review (MTR) that will include a comprehensive assessment of the progress achieved at the mid-point of project implementation and will serve as a platform for revisiting project design issues and where adjustments might be needed; (iii) other complementary reviews that could be the basis of exchange/study visits, analytical and knowledge sharing activities, etc.; and (iv) implementation completion where an independent assessment of the project will be undertaken and lessons drawn to inform future or similar operations.

Implementation Support Plan

3. The IS Strategy, as articulated above, will include a concerted plan of technical, safeguards, and fiduciary support needed to ensure due diligence over the course of project implementation.
 - a. At the **technical** level, the Bank team (with members based in Uganda, Washington, and internationally) will assemble the appropriate technical skills and experience needed to support implementation of this complex operation. This team will include participation by IFC, particularly as regards issues around policy pertaining to, and regulation of, commodity value chains.
 - b. **Fiduciary** reviews will be conducted by the Bank's FM and procurement specialists to ensure that systems and capacities remain adequate during the life of the project in accordance with the Bank's fiduciary requirements.
 - c. Regarding **safeguards**, the Bank's safeguard team will consist of social and environmental specialists who will guide the project team in applying the agreed safeguard instruments as well as reviewing compliance during implementation support missions.

Table A5.1: Main focus in terms of support to project implementation

Time	Focus	Skills Needed	Resource Estimate	Partner Role
First 12 months	<ul style="list-style-type: none"> • Project effectiveness and implementation start-up • Establishment of PCU • Finalization of PIM • Safeguard instruments application/compliance • M&E system (methodology, etc.) in place • Fiduciary training provided 	<ul style="list-style-type: none"> • Lead Agriculture Services Specialist (TTL) • Senior Agricultural Specialist (Co-TTL) • Senior Irrigation Specialist • Senior Private Sector Specialist • ICT Specialist • Operations Officer • Procurement Specialist • Safeguards Specialist • M&E Specialist • Safeguards Specialists (Social and Environmental) • Legal Counsel • Finance/Disbursement Officer 	TBD	FAO/CP
12-48 months	<ul style="list-style-type: none"> • Implementation of planned activities/review of AWP&Bs • Monitoring, reporting against targets • IS missions conducted • MTR undertaken (during year 3) 	Same as above		
49-60 months	<ul style="list-style-type: none"> • Implementation of planned activities/review of AWP&Bs • Monitoring, reporting against targets • IS missions conducted • Project completion and ICR preparation 	Same as above		

Table A5.2: Skills mix required

Skills Needed	Number of Staff Weeks	Number of Trips	Comments
<ul style="list-style-type: none"> • (Lead/Senior) Agriculture Specialists • Irrigation Specialist • Private Sector/Agribusiness (IFC) • ICT • Financial Management • Procurement • Safeguards (social and environment) • Legal • Finance/Disbursements • Operations • Project Assistance Support 	TBD	TBD	

Table A5.3: Partners

Name	Institution/Country	Role
USAID IDB JICA KOICA AfDB AFD Netherlands		DPs currently in the sector

Annex 6: Financial and Economic Analysis
UGANDA: Agriculture Cluster Development Project (ACDP)

INTRODUCTION

1. **The economic and financial analysis (EFA) of ACDP is an ex-ante evaluation of the project's future performance**, taking into account the projected outreach to beneficiaries, acreage, returns from improved productivity, post-harvest handling and marketing in the selected value chains, and projected cost streams associated with the interventions.

OVERALL BENEFITS AND BENEFICIARIES OF ACDP

2. **Beneficiaries.** ACDP will mainly focus on enhanced productivity, bulking, grading, and marketing of rice, maize, beans, cassava and coffee. At farm level, the project will reach out to at least 450,000 direct beneficiaries of the e-Voucher scheme and irrigation scheme rehabilitation, of which there are approximately: (a) 180,000 producers of maize of which roughly half (around 95,000) will also be supported to produce beans in a maize/bean rotation; (b) 40,000 rice producers, including 15,000 smallholders in irrigation schemes and 25,000 in other lowland rice farming systems; (c) 110,000 producers of coffee, involved in the rehabilitation and development of Robusta and Arabica plantations; and (d) 25,000 producers of cassava, in monoculture or intercropped with maize.

3. **e-Vouchers for Inputs.** The core group of beneficiaries will benefit from e-Vouchers to acquire seed and fertilizer for one acre of land, which will result in higher farm productivity and revenues. About 450,000 beneficiaries will be reached for a total of 450,000 acres. The matching grant will be 66 percent in the first year, 50 percent in the second year, and 33 percent in the third year. Total cost of the e-Vouchers will be around US\$90 million (matching grant of the project). Additional production will be around 200,000 MT with a market value at farm gate of US\$65 million per annum. The additional production will create the necessary critical mass of marketable surplus to attract in large-scale, higher-quality buyers. This will trigger a virtuous cycle of profitable production, improved productivity, and increased purchases of inputs. Parallel to this the project will take a proactive approach to enhance market access. Other benefits of the e-Vouchers will be: (i) jumpstarting the necessary significant increase in production and productivity with the required national outreach; (ii) reducing risks related to farmers' financial commitments; (iii) enabling farmers to directly engage with and understand the benefits of the technology package; (iv) creating a demand at retail level and a profitably opportunity for input suppliers, in particular input retailers; and (v) incentivizing farmer organization by distributing e-Vouchers through Rural Producer Organizations (RPOs), Area-based Cooperative Enterprises (ACCEs), and groups of outgrowers.

4. **Capacity Building of Farmers' Organizations.** At least 3,000 RPOs and other grassroots farmers' organizations and 300 ACCEs with evidence of progressing towards a more commercial and market-oriented marketing approach will be trained in post-harvest handling, best practices, good governance and accountability within cooperative arrangements, marketing, recordkeeping, operations, and cost management. These organizations will also benefit from competitive matching grants for private investments with a collective interest in: (a)

infrastructure and facilities for bulking, grading, storage, and processing; (b) small-scale equipment for production and value addition. The project support will help them to become more strategic in their operations and to develop commercial agribusiness agreements with output and factor markets. In addition, it will enable them to improve their access to national and regional export markets.

5. **Agribusiness Agreements and Market Linkages.** The project will also benefit input retailers, traders, and processors involved in the selected value chains and e-Voucher scheme for inputs. Some agribusinesses, financial institutions, and commercial farmers involved in agreements with ACCEs and RPOs will also benefit, in particular from facilitation services, capacity building, and support to outgrower schemes. Their involvement will be crucial to ensure for smallholders effective access to productive assets, capital, services, knowhow, and markets. National apex organizations of cooperatives will assist their members to build the required institutional capacity, provide bookkeeping services and audits, negotiate business agreements, and get access to market information.

6. **Enabling Public Infrastructure.** The participating districts will receive support to finance enabling public infrastructure for value chain development and market access, for example rural roads, rural electrification, and public market infrastructure. Support provided by the project will be around US\$12 million. The benefiting districts will ensure maintenance of the infrastructure.

FINANCIAL ANALYSIS

Summary of Farm Models and Financial Analysis

7. **Farm Models.** Nine farm models will be promoted by the e-Voucher scheme (Table A6.1).²⁵ The models are designed for one acre of land and use of inputs, in line with the package subsidized by the e-Voucher scheme. All models show a solid impact of fertilizer and improved seeds on crop yields, positive incremental net revenues, and favorable benefit/cost (B/C) ratios.

Table A6.1: Summary of farm models

Farm model	Yield without project (kg/acre)	Yield with project (kg/acre)	Gross revenue with project (UGX/acre)	Net revenue with project (UGX/acre)	Incremental net revenue (UGX/acre)	B/C ratio – total costs
Irrigated rice	1,000 (1 harvest)	2,999 (2 harvest)	1,505,750 (per season)	519,149 (per season)	127,155 (per season)	1.53
Lowland rice	700	1,188	1,128,125	415,531	141,315	1.58

²⁵ Detailed crop budgets available in Working Paper “ACDP: Financial and Economic Analysis.”

Hybrid maize	900	1,615	969,000	316,128	61,030	1.48
OPV maize	700	1,350	810,000	243,934	85,891	1.43
Maize beans rotation	525(maize) 225 (bean)	1,175 (maize) 400 (bean)	1,165,000	309,024	124,192	1.48
Cassava- maize intercropping	3,000 (cas)	6,720 (cas)	1,384,500	415,788	553,065	1.43
Robusta coffee rehabilitated	200	800	1,480,000	583,000	339,000	1.65
Robusta coffee new	0	480	1,021,000	753,000	293,000	1.36
Arabica coffee new	0	480	1,154,000	401,000	425,000	1.53

8. **Input and Output Markets.** Given that cereal, cassava, and bean markets are highly liberalized in Uganda and Kenya, the main challenges relate to the lack of an efficient production, post-harvest handling (in particular cost efficient bulking and drying), and marketing system, as well as the provision of fertilizer and quality seed at competitive prices. Currently, imported inputs are expensive in Uganda. The price of fertilizer amounts to US\$920-1,080/MT, compared to FOB prices of US\$300/MT (Urea), US\$370/MT (DAP), and US\$300/MT (Superphosphate). The high unit cost of fertilizer has a direct impact on working capital requirements of smallholders and on the B/C ratio of the selected farm models and therefore influences sustainable adoption of technology packages. A higher market-conform demand for fertilizer through the e-Voucher scheme will contribute to the development of input supply chains, realization of economies of scale, and enhanced price competition in input supply.

Financial Analysis of Interventions in the Rice Value Chain²⁶

9. **Consumption and Supply of Rice in Uganda.** Demand for rice in Uganda has grown at an average rate of nearly 9 percent per annum since 1990 to approximately 270,000 MT in 2013. During this period, production of rice also steadily expanded at a rate of 4 percent per annum, mainly due to area expansion of upland rice, and averaged approximately 233,000 MT²⁷ in 2010. Imports of rice fluctuated around 80,000 - 90,000 MT per annum in 2010-2011, often IRR16 rice

²⁶ Wholesale prices for the selected commodities were from the MAAIF Department of Planning and M&E database. Based on the most recent Uganda National Household Survey, it was assumed, that farm gate prices are approximately 80 percent of wholesale prices.

²⁷ UNDAF. Value Chain Analysis (VCA) of the Rice Subsector in Uganda. DIMAT. November 15, 2012.

5 to 25% broken from Vietnam and Pakistan. Exports, essentially re-exports, were about 40,000 MT per annum, mainly to Rwanda, DRC, and South Sudan. In addition, small quantities of locally produced rice were exported to EAC countries and South Sudan. Currently (2013-14), Uganda has a structural and growing deficit of at least 40,000 MT of rice per annum.

10. Expansion of rice production in Uganda is driven by an attractive domestic market price for paddy. In January 2014, wholesale prices of both imported and local rice in Kampala were about US\$900-1,000/MT. The EAC market is protected by an import duty of 75 percent (or US\$200/MT, whichever is highest) on the CIF reference price in Mombasa. Consequently, the EAC market protection amounts to US\$250-300/MT. In addition, as Uganda is landlocked, its farmers also benefit from the freight costs on imported rice between Mombasa and Kampala, estimated at US\$150-200/MT. The CIF reference price of imported rice in Mombasa is approximately US\$350-400/MT, depending on the percentage of broken grains.

Table A6.2: Price structure of imported rice (January 2014)

Item	Price / Cost (US\$/MT)
Wholesale market - Kampala	900-1,050
Other costs and profit margin wholesale - Kampala	150
Freight Mombasa - Kampala	150-200
Import duty – EAC	250-300
CIF price of imported rice - Mombasa	350-400

11. **Post-harvest Handling and Marketing of Local Rice.** The local rice market is dominated by farmers, who consume 40 percent of their produced rice either as seed or food, and barter trade with neighbors. About 60 percent is sold directly to middlemen or milled by farmers and sold to traders or consumers. Tilda Ltd in Kibimba is the only agro-industrial rice producer and processor in Uganda, with an annual volume of around 25,000 MT.

12. Table A6.3 summarizes the price structure of local rice. Given a wholesale price of local rice in line with the price level of imported rice, the corresponding farm gate price of paddy amounts to US\$320-350/MT. Irrespective of the farming system, the total production cost of paddy in Uganda, including inputs and labor,²⁸ varies between US\$220-250/MT. All sources suggest that costs and profit margins at the wholesale and processing level are acceptable given the current structure of the chain and that no excess profit is being made. However, costs are probably too high because of the small scale of operation and high transaction costs at all levels. Current net profit margins of farmers vary between US\$150-200/MT of paddy, less than the current level of the import duty. If the import duty was reduced from 75 percent to 25 percent, as for other cereals in the EAC zone, the wholesale price of rice in Kampala could drop to US\$750-800/MT, putting pressure on the price of local rice and the profitability of rice production.

²⁸ All labor valued at UGX 4,500 per day.

TableA6.3: Price structure of local rice

Item	UGX/kg	US\$/MT
Wholesale price of rice in Kampala	2,250-2,520	900-1,000
Sales price of rice at local mill	2,100	825
Farm gate price of paddy	800-1,000	320-450
Cost of paddy production	550-625	220-250
Cost of external inputs for production (without labor)	128-355	51-142

13. **Farm Models for Irrigated and Lowland Rice Cultivation.** The additional annual production of paddy resulting from plans for irrigation scheme investments prepared under the project is estimated at 30,000 MT of paddy or 20,000 MT of rice per annum. About 16,000 acres (6,400 hectares) of irrigated rice will be planned and Water Users' Associations (WUAs) put in place and trained in anticipation of investments in their irrigation schemes. In addition, 24,000 acres of lowland rice will be supported. Upland rice will not be promoted by ACDP because of its negative impact on the environment.

14. Overall, farmers view cultivation of rice in Uganda as profitable given the current price level. Given a market price for paddy of UGX 950/kg at farm gate (assuming low-quality rice), irrigated rice production and lowland rice development are profitable, with B/C ratios of 1.53 and 1.58, respectively (with technology promoted by the project). Sensitivity analysis shows that a farm gate price of paddy below UGX 700/kg is the threshold for profitability of irrigated rice.

Table A6.4: Summary of crop budget for irrigated rice

		Without project	With project, cropping intensity 1	With project, cropping intensity 2
Market price paddy	UGX/kg	950	950	950
Total yield	kg/acre	1,000	1,600	3,000
Cropping intensity		1 (1 harvest)	1 (1 harvest)	2 (2 harvests)
Gross revenue	UGX/acre	950,000	1,505,750	2,849,050
Labor costs (incl. family)	UGX/acre	425,839	528,773	1,026,177
Input and other costs	UGX/acre	132,167	457,829	764,345
Total costs	UGX/acre	558,006	986,601	1,790,521
Net revenue	UGX/acre	391,994	519,149	1,058,529
Incremental net revenue	UGX/acre		127,155	274,541
Total cost of production	US\$/MT	221	249	239
B/C ratio (950 UGX/kg)		1.70	1.53	1.59
B/C ratio (800 UGX/kg)		1.47	1.31	1.37
B/C ratio (1,000 UGX/kg)		1.78	1.60	1.66

Table A6.5: Summary of crop budget for lowland rice

		Without project	With project
Market price paddy	UGX/kg	950	8,950
Total yield	kg/acre	700	1,188
Gross revenue	UGX/acre	665,000	1,128,125
Labor costs (incl. family)	UGX/acre	320,438	333,735
Input and other costs	UGX/acre	70,347	378,859
Total costs	UGX/acre	390,784	712,594
Net revenue	UGX/acre	274,216	415,531
Incremental net revenue	UGX/acre		141,315
B/C ratio (950 UGX/kg)		1.70	1.58
B/C ratio (800 UGX/kg)		1.46	1.33
B/C ratio (1,100 UGX/kg)		1.94	1.83

Financial Analysis of Interventions in the Maize Value Chain

15. **Maize Production and Marketing in Uganda.** Maize production in Uganda, mainly white maize for human consumption, steadily increased from 1.17 million MT in 2001 to about

2.55 million MT in 2011 (according to MAAIF). All sources confirm this rapid expansion, although growth estimates vary. Uganda has always been more than self-sufficient in maize, with small regional imports. Estimates of exports vary widely, however. Total exports, including unofficial, vary between 150,000-200,000 MT per annum. About 60 percent of all maize exported goes to Kenya and 15 percent goes to Tanzania. Other growing regional markets are Rwanda, Burundi, and South Sudan. Maize is a growing source of foreign exchange for Uganda, with a value estimated at US\$38.2 million by BoU in 2010.

16. All regional projections suggest that future demand for maize will outstrip supply in the region, with Kenya and South Sudan being important importers. The regional market deficit for the next decade is estimated at 8 million MT per annum. The annual deficit of Kenya varies from year to year, but under normal weather conditions is currently estimated at more than 300,000 MT per annum (and even 800,000 MT in 2013/14), of which 300,000 MT are procured in the region and the rest imported from the world market, mainly Argentina, the United States, and South Africa.

17. **Post-harvest Handling and Marketing of Maize.** About 25-35 percent of all maize produced in Uganda enters commercial channels. Most smallholders produce at very low levels of productivity, which renders uneconomical rural bulking and processing operations without adapted bulking centers. Immediate cash needs encourage farmers to market their maize before it is properly dried.

18. Southern Uganda has a bimodal rainfall with the main harvest in June-August and the short-season harvest in December-January. Northern Uganda is more arid and has a single harvest from October to December. Maize prices are higher in the off- than on-season. The seasonal price fluctuates on average by roughly 25 percent between September and March, a level of fluctuation that can be of importance to smallholder farmers but is not enough to encourage significant levels of commercial intertemporal arbitrage.

19. For a few years now, several private entrepreneurs have been investing in bulking, drying, and bagging of maize and selling to the World Food Programme (WFP) or exporting it to Kenya, Rwanda, and South Sudan. In 2012, the Joseph Initiative Ltd (JI) in Masindi developed a network of village cribs to buy maize for cash, which is then dried and bagged in a central factory. Table A6.7 presents JI's price structure along the maize value chain. The wholesale price of maize in Kampala is approximately US\$300/MT, of which US\$220 is for raw material, US\$20/MT is for transport to Kampala, and US\$60/MT is for post-harvest handling. For bulking at the village level, cribs equipped with a sheller, balance, and moisture meter are used (investment cost of US\$7,000 per unit, with a storage capacity of 20 MT of cobs and an annual capacity of at least 300 MT). The unit can be amortized in one or two years at a maximum.

20. Table A6.6 compares the wholesale market prices of maize in the region in December 2014. Overall, Uganda is competitive as a regional producer of maize. The MAFAP study (2012) confirms that Uganda has potential as a maize exporter in East Africa, in particular to Kenya, Rwanda, and South Sudan. Spatial differences in wholesale prices in the region confirm this potential (Table A6.6).

21. In line with these conclusions, the emphasis of the project in the maize value chain will be on increases in productivity, reduction of transaction costs, and reduction of risks, not on seasonal storage. ACDP will therefore work on quality of maize through bulking, grading, and

drying, as well as promotion of agribusiness linkages and agreements between farmers' organizations and exporters/wholesale buyers. At the village level, the use of drying cribs and bulking facilities will be promoted through competitive matching grant schemes. Bulking schemes can offer a 20-25 percent improvement in farm gate prices and reliable transactions at transparent prices.

Table A6.6: Regional wholesale prices of maize (December 2014)

Wholesale market	UGX/kg	US\$/MT
Uganda – Masindi	550	220
Uganda – Kampala	742	297
Uganda – Mbale	647	259
Kenya – Mombasa	1,127	451
Kenya – Nairobi	878	351
Burundi – Bujumbura	1,262	505
Rwanda – Kigali	1,053	421
South Sudan – Juba	953	381

Source: RATIN, Joseph Initiative Ltd.

Table A6.7: Costs of maize handling & distribution - farm gate to market

Activity	UGX/kg	US\$/MT
Raw material	550	220
Bulking, handling, and drying	120	52
Cleaning and drying		32
Transport from local trading center to Kampala	50	20
Loading, unloading, and weighing - Kampala	35	9.6
Total	754	302
Transport from Kampala to Nairobi	125	50
Transport from Kampala to Kigali	300	120
Transport from Kampala to Juba	200	80

Source: Joseph Initiative Ltd. 2014.

22. **Farm Models for Maize.** It is estimated that 70-75 percent of maize farmers cultivate between one and two acres. The project will target directly at least 180,000 smallholders involved in maize cultivation. Additional production of maize will be around 103,000 MT per annum, with a market value of US\$24 million.

23. The impact of the technology package that will be promoted on yield and revenue are summarized in Table A6.8. Overall, the profitability of improved production technology and crop husbandry is sound, given a farm gate price of UGX 600/kg of grain. A farm gate price of UGX 400/kg seems to be a breakeven point for profitability, certainly if fertilizers are purchased. Total production cost of maize, including farm labor, varies between US\$120-190 per acre. Total cash costs of improved maize production (OPV or hybrid) are about UGX 350,000/acre (or

US\$120/MT). Currently the price of improved seed ranges from UGX 4,000-5,000/kg while that of fertilizer is about UGX 120,000-130,000/50-kg bag. Consequently, traditional production systems have a lower cost of production per MT. Because of the high cost of fertilizer, the B/C ratio of improved systems is often lower than that of traditional systems.

Table A6.8: Summary of crop budget for intensification of maize production

		Hybrid maize		OPV maize	
		Without project	With project	Without project	With project
Market price (UGX/kg)	UGX/kg	600	600	600	600
Yield (kg/ha)	kg/acre	900	1,615	700	1,350
Gross revenue	UGX/acre	540,000	969,000	420,000	810,000
Labor costs (incl. family)	UGX/acre	239,850	297,323	218,550	229,275
Input and other costs	UGX/acre	45,053	355,550	43,408	336,791
Total costs	UGX/acre	284,903	652,872	261,958	566,066
Net revenue	UGX/acre	255,098	316,128	158,043	243,934
Incremental net revenue	UGX/acre	,	61,030	,	85,891
Total cost of production	US\$/MT	127	162	150	191
B/C ratio (maize price :600 UGX/kg)		1.90	1.48	1.60	1.43
B/C ratio (maize price: 500 UGX/kg)		1.59	1.24	1.35	1.19
B/C ratio (maize price: 400 UGX/kg)		1.28	0.99	1.09	0.95

Financial Analysis of Interventions in the Bean Value Chain²⁹

24. **Bean Production and Marketing in Uganda.**³⁰ In 2010, Uganda ranked second in the EAC region in production of beans after Tanzania, with a production of 455,000 MT. According to MAAIF, the national bean production was estimated at 915,000 MT from 645,000 hectares in 2011. Beans provide approximately 25 percent of the total dietary calorie intake and 45 percent of the protein intake in Uganda. Over 90 percent of Ugandan bean production is consumed domestically; little is destined to regional export markets, such as Kenya, South Sudan, Rwanda, Tanzania, and DRC. Exports are both formal and informal, and were estimated in 2011 at 35,920 MT worth about US\$20 million, up from only 6,756 MT worth over US\$2 million in 2001. During recent years, WFP was the leading exporter of Ugandan beans to neighboring countries, including Rwanda, Burundi, DRC, Kenya Sudan and South Sudan. Uganda also imports beans, although in relatively small volumes (less than 1,000 MT per annum).

²⁹ The quality of statistics on bean production and marketing are very weak. In addition, prices vary significantly as a function of the variety (color) of the beans.

³⁰ UNDAF. Value Chain Analysis (VCA) of the Bean Subsector in Uganda. DIMAT. November 15, 2012.

25. **Post-harvest Handling and Marketing of Beans.** The bean value chain consists of input suppliers, producers, villager assemblers/middlemen, traders, processors, and consumers. Producers sell approximately 75 percent of the beans to village collectors and brokers. The remaining 25 percent is retained for home consumption and seed. Village collectors sell to traders, including wholesale traders in major towns. Wholesale traders then sell to institutions or export to Kenya, South Sudan, Rwanda, DRC, and Burundi. The various actors' shares of the bean value were: wholesalers (9 percent); village collectors (11 percent); and producers (66 percent). Different bean varieties fetch different prices at the market, making it difficult to compare spatial price differences.

26. The average land size under bean production is one acre per household. Beans are grown in two planting seasons: March to June, with 40 percent of annual production; and September to November, with 60 percent. The national average bean yield is 1.5 MT/ha, with the highest yield of 1.7 MT/ha reported in both the Western and Northern regions, followed by the Central region (1.4 MT/ha). The Eastern region records the lowest yield (0.9 MT/ha).

27. **Farm Models for Bean Production.** The project will reach an estimated 180,000 producers of beans, mainly second-season cropping in rotation with maize. Given a yield increase from 225 kg/acre to 400 kg/acre, cultivation of beans is profitable. The e-Voucher for inputs will be provided only for one season (instead of two as for other crops). Additional production will amount to 21,600 MT per annum with a market value of US\$14.5 million.

Table A6.9: Summary of crop budget a maize-beans rotation

		Without project	With project
			Rotation of maize and beans
Market price maize	UGX/kg	600	600
Market price beans	UGX/kg	1,150	1,150
Yield maize	kg/acre	525	1,175
Yield beans	kg/acre	225	400
Gross revenue	UGX/acre	573,750	1,165,000
Labor costs (incl. family)	UGX/acre	322,031	376,363
Input and other costs	UGX/acre	66,887	479,613
Total costs	UGX/acre	388,918	855,976
Net revenue	UGX/acre	184,832	309,024
Incremental net revenue	UGX/acre	,	124,192
B/C ratio base case		1.48	1.48

Financial Analysis of Interventions in the Cassava Value Chain

28. **Cassava Production and Marketing.** Production and regional trade of cassava is poorly or not documented, as the activity is mainly situated in the informal sector. Cassava production in Uganda was estimated at around 3 million MT in 2010 (MAAIF). In addition to fresh consumption (boiled, peeled cassava), substantial quantities of cassava are consumed in the form

of dried peeled, milled, and slightly fermented cassava, which is a cheap form of cassava. Its processing is mainly based on manual labor (except for milling). According to NRI/AII (2012),³¹ about 200,000 MT of cassava flour are consumed per annum in Uganda, the equivalent of between 600,000-800,000 MT of fresh cassava (between 20-25 percent). It is assumed that large quantities of cassava flour or dried roots are exported to South Sudan, in addition to some exports to DRC and occasionally Kenya, Tanzania, and Rwanda. However, no reliable trade statistics are available.

29. Cassava in Uganda is currently only used for traditional consumption, as fresh cassava and slightly fermented cassava flour. Opportunities to mechanize these traditional chains are limited (compared to the *gari*, *attieke*, and paste markets that require graters, mills, and roasting equipment). Industrial use of cassava (starch, high-quality cassava flour, glue extender, animal feed) was analyzed several times over the last decades in Uganda and theoretical demand was identified, but these value chains have not taken as of yet. Unfortunately, effective demand for these potential markets seems to be low or almost nonexistent at the moment. In addition, the available studies did not look at the financial feasibility of these investments, in particular the cost of energy for drying. Furthermore, no prototype equipment is being tested in a commercial environment in Uganda. Consequently, the project is obliged to start piloting interventions to test processing equipment (collaboration with ATAAS might be recommended).

30. **Post-harvest Handling and Marketing.** Domestic demand for fresh cassava has been declining due to high market prices. As a consequence, consumers seek alternative staple foods such as sweet potatoes, rice, maize, or bread. Wholesale prices of fresh cassava in 2012 were UGX 691/kg (US\$276/MT) in Kampala and UGX 470/kg in Soroti (US\$188/MT), which is expensive compared to cassava prices in the region and compared to rice and maize prices. Farmers obtain between 15-25 percent of the urban retail price. These high prices are an opportunity for Ugandan farmers. However, the price level is too high to develop cassava as a competitive industrial activity (high-quality cassava flour or starch) or as animal feed.

31. Marketing of fresh cassava is generally profitable, but risky at a larger scale and labor-intensive. Therefore, transaction volumes remain small. Traders complain about declining supplies, citing poor yields, in part due to cassava brown streak disease. Also, the low quality, particularly the small size of roots arriving in the market, is a concern.

32. **Farm Models for Cassava.** Cassava will be promoted as monoculture or intercropped with OPV maize. Farm models are based on a farm gate price of UGX 100/kg, a rather conservative price, but one that reflects the difficulty of selling larger volumes of fresh roots.

³¹ NRI & African Innovation Institution. Cassava Market and Value Chain Analysis, Uganda Case Study, Final Report July 2012.

Table A6.10: Summary of crop budget for intensification of cassava production

		Without project	With project Cassava	With project OPV maize and cassava
Market price maize	UGX/kg			600
Market price cassava	UGX/kg	100	100	100
Yield maize	Kg/acre	0		1,188
Yield cassava	Kg/acre	3,000	5,600	6,720
Gross revenue	UGX/acre			1,384,50
		300,000	560,000	0
Labor costs (incl. family)	UGX/acre	421,811	548,968	609,178
Input and other costs	UGX/acre	15,466	21,823	359,534
Total costs	UGX/acre	437,276	570,791	968,712
Net revenue	UGX/acre	-137,276	-10,791	415,788
Incremental net revenue	UGX/day		126,485	553,065
B/C ratio	UGX/acre		0.98	1.43

Financial Analysis of Coffee

33. **Production and Marketing of Coffee in Uganda.** Coffee is Uganda's principal export, accounting for over 20 percent (on average) of the country's total export earnings. Smallholder farmers are the drivers for coffee production: 1.78 million households are involved in coffee production in Uganda. The country has a long tradition in the production and marketing of coffee. However, most coffee growers seem to be in a vicious circle of low productivity – low working capital. Further, value addition after harvest is quite low in Uganda.

34. **Farm Models for Coffee.** Uganda's coffee yields are as low as 550 kg/ha, compared with up to 2.5 MT/ha in Vietnam and Brazil. The differential is mostly due to poor agronomic practices and low input use. Low yields translate into high production costs, making Uganda uncompetitive on price and farmers less profitable on sale price minus cost per kg.

35. The project will support development of 48,000 acres of new Robusta and 14,000 acres of new Arabica plantations, and rehabilitation of 48,000 acres of Robusta plantations. The total number of direct beneficiaries will be 110,000 over six years. This will result in an additional production of 40,000 MT of coffee with a farm gate value of approximately US\$20 million. Assumptions for the e-Vouchers are as follows: (i) e-Vouchers are for one acre per beneficiary; and (ii) subsidies are for planting material and fertilizer (50 percent in years 1 and 2). For new plantations, maize/bean intercropping in years 1 and 2 will be taken into consideration.

36. Tables A6.11, A6.12, and A6.13 simulate the cash flow over an investment period of five years. The rejuvenation of existing coffee plantations is considered one of the most effective interventions. After about 18 months during which the coffee plants reshoot, a yield improvement is expected and a positive cash flow is obtained. In the development of new Robusta and Arabica coffee plantations, the cash flow only turns positive in year 4 or year 5. The

major challenge of smallholders is accessibility of pesticides, fertilizers, and post-harvest materials during the investment phase. The e-Vouchers will allow farmers to cover this period.

Table A6.11: Development of one acre Robusta plantation

Market price: UGX 1,850/kg	Unit	Without project	With project				
		Year 0	Year 1	Year 2	Year 3	Year 4	Year 5
Yield	kg/acre	0	0	0	240	320	480
Gross revenue	UGX/acre	0	0	0	511	681	1,021
Total costs	UGX/acre	0	1,401	723	735	581	753
Cash flow	UGX/acre	0	-1,401	-723	-224	100	269
B/C ratio			0	0	0.70	1.17	1.36

Table A6.12: Development of one acre Arabica plantation

Market price: UGX 2,410/kg	Unit	Without project	With project				
		Year 0	Year 1	Year 2	Year 3	Year 4	Year 5
Yield	kg/acre	0	0	0	160	320	480
Gross revenue	UGX/acre	0	0	0	385	770	1,154
Total costs	UGX/acre	0	1,591	693	649	581	753
Cash flow	UGX/acre	0	-1,591	-693	-264	189	401
B/C ratio			0	0	0.59	1.32	1.53

Table A6.13: Rehabilitation of one acre Robusta plantation

Market price: UGX 1,850/kg	Unit	Without project	With project				
		Year 0	Year 1	Year 2	Year 3	Year 4	Year 5
Yield (kg/ha)	kg/acre	200	320	500	640	720	800
Gross revenue	UGX/acre	370	592	925	1,184	1,332	1,480
Total costs	UGX/acre	100	995	904	905	751	897
Cash flow	UGX/acre	271	-403	21	279	581	583
B/C ratio		3.72	0.60	1.02	1.31	1.77	1.65

ECONOMIC ANALYSIS

Assumptions

37. To calculate the Economic Internal Rate of Return (EIRR) of the project, the following assumptions were made. The analysis uses a cash flow model over a 20-year period that includes all investment and operational costs of ACDP, as well as the incremental net revenues derived from the above financial models. The base case scenario assumes 40 percent area expansion and 60 percent yield increase in existing fields. It also assumes a 65 percent adoption rate of new technologies after the initial voucher phase (except for irrigated rice, for which a 100 percent adoption rate is assumed). The adoption rate is based on experiences in other countries. The

economic cost of ACDP was calculated using COSTAB. The opportunity cost of labor (economic price) is UGX 3,000 per day (US\$1.2), which is the bottom price for unskilled rural labor in rural areas of Uganda. The opportunity cost of capital is 12 percent. The cost to maintain the project after year 6 (recurrent costs to ensure ACDP's sustainability) is assumed to be 70 percent of year 6's expenditure.

38. Economic prices of targeted crops were calculated on the basis of the following reference markets: (a) rice imported (5% broken) from Pakistan via the port of Mombasa (economic price of paddy: UGX 800/kg, compared to a financial market price of UGX 950/kg); (b) for maize, reference markets are the international market of maize (economic price of maize: UGX 700/kg, compared to a market price of UGX 600/kg); (c) for coffee, which is mainly exported to the world market, the economic price is assumed to equal the financial price; (d) for cassava and beans, the economic price equals the financial price, as regional trade is limited and external inputs are not used by smallholders.

39. The economic analysis is based on direct costs and benefits. Social and indirect benefits were not taken into account. These include, for example, creation of employment, enhanced competition in input markets, enhanced national food security, import substitution for rice, foreign currency earnings, and emergence of farmers' organizations.

Economic Analysis of ACDP

40. This economic analysis is based on the economic benefits and costs of the project as a whole. The EIRR of the base case scenario is 16.4 percent.

41. A number of scenarios were tested to establish the economic viability of the project in the event of adverse factors. The sensitivity analysis, summarized in Table A6.14, confirms that the EIRR is quite robust. However, the project is sensitive to the realization of incremental benefits per acre. In addition, to achieve an EIRR of 12 percent, at least 75 percent of the projected number of beneficiaries must be reached.

Table A6.14: Economic internal rate of return (EIRR)

Scenario	Related risks	Net Present Value (US\$ million)	EIRR (%)
Base case		37.1	16.4
Decrease in incremental benefits per acre: -10%	Low crop yield, reluctance to adopt technologies, low farm gate prices, high cost of fertilizer, weak linkages to regional and export markets	19.1	14.3
Decrease in incremental benefits per acre: -20%		1.1	12.1
Program cost rise of 10%	Low management capacity of PCU and districts	54.5	18.5
Program cost rise of 20%		43.6	16.8
Number of farmers/acre -20%	Low implementation capacity of PCU	8.6	13.0
Number of farmers/acre -25%		1.0	12.1
	Low capacity of district extension services to reach out to direct beneficiaries		
Benefits delayed 1 year	Slow development of market linkages	22.1	14.3
Benefits delayed 2 years		7.7	12.8

Economic Analysis of Irrigated Rice (Component 2)

42. This section presents a partial analysis of the economic rate of return of investments in irrigated rice schemes. The analysis looks at the investment from the point of view of the government, which can compare several options to allocate public funds for investments in the economy. Only the costs and benefits directly related to irrigated rice schemes are taken into account. The objective is to assess the relevance and effectiveness of investments in rice irrigation schemes given the capacity of the firms hired to carry out civil works in irrigation schemes to execute the works at competitive prices and farmers' capacity and willingness to manage and maintain these systems as required.

43. Assumptions of the base case scenario, as proposed in the project document, are as follows: (a) 16,000 acres to be developed or rehabilitated, of which 2,625 acres are for private outgrower/spring schemes; 6,500 acres are for small-scale lowland schemes; and 6,654 acres are for large-scale lowland schemes; (b) unit costs for infrastructure are US\$2,000/ha for private outgrower/spring schemes; US\$3,000/ha for small-scale lowland schemes; and US\$4,000/ha for large-scale lowland schemes; (c) an economic price for paddy of UGX 735/kg (US\$294/MT); this is a theoretical price in case import duties are removed, so as to liberalize access of imported rice; (d) a crop intensity of 1.8 (80 percent double season cropping); and (e) 30 percent existing fields and 70 percent expansion.

44. The EIRR in irrigated rice schemes was analyzed; for the base case scenario, the EIRR is 14.7 percent, which is satisfactory and above the 12 percent threshold. Overall, the assumptions

of the base case scenario are conservative in terms of output farm gate price. The proposed unit costs for investments are quite low but reflect the regional prices for similar intervention.

45. A careful assessment of overall conditions for the profitability and competitiveness of the investment is required:

- i. A prioritization of irrigation schemes with unit costs of investments in infrastructure that are cheap to develop;
- ii. A prioritization of irrigation schemes with availability of water to allow double cropping of rice or a rotation of rice and vegetables; in Eastern Uganda, these conditions are more easily fulfilled because of rainfall;
- iii. Scheme management and maintenance should be up to standard;
- iv. Crop yields should be closely monitored and corrective measures undertaken if targets are not obtained. Access to inputs, in particular fertilizer and agro-chemicals, are preconditions to achieve the targeted yields and financial returns;
- v. Value addition, bulking, and grading could contribute to the quality of the rice to avoid direct competition with cheap, broken imported rice.

46. A sensitivity analysis is presented in Table A6.15. The EIRR is extremely sensitive to crop intensity, the reference price of paddy, and the unit cost of investments. The analysis confirms the preconditions for selection of schemes listed above.

Table A6.15: Economic analysis of irrigated rice schemes

Scenario	EIRR (%)
Base case Price of paddy UGX 800/kg, crop intensity 1.8, 70% area expansion	14.7
Sensitivity analysis: farm gate price of paddy (economic price) Economic price of paddy UGX 800/kg (no import duty) – base case	14.7
Economic price of paddy UGX 865/kg (25% import duty)	18.8
Economic price of paddy UGX 950/kg (75% import duty)	23.9
Sensitivity analysis: % double cropping season Crop intensity 1.8 – base case	14.7
Crop intensity 1.5	10.6
Crop intensity 1.2	6.0
Sensitivity analysis: unit cost of infrastructure Unit cost of investment – base case	14.7
Unit cost of investment +20%	11.6
Unit cost of investment +50%	8.2

Annex 7: ACDP Clusters

UGANDA: Agriculture Cluster Development Project (ACDP)

1. **A commodity cluster is a contiguous area made up of two to three districts (see Annex 8 for a list of the clusters) where there is already a concentration of value chain actors (producers, traders, processors, etc.) with considerable experience in the commodity, as well as requisite infrastructure that, taken together, provide opportunities for success in scaling up production and development of the relevant commodity value chains.** While clusters are not a formal level of government in Uganda, cluster committees will be formed to make it possible for stakeholders located in neighboring districts to make collective decisions about issues (such as road maintenance, market chain developments, etc.) that involve more than one district (further discussion of this arrangement is provided in the main section of the PAD).

2. **Cluster development is intended to facilitate concentrations of related agribusinesses to spur:**

- Increased productivity (through specialized inputs, access to information, synergies, and access to public goods);
- More rapid innovation through competition in proximity; and
- New business formation (filling in niches and expanding the boundaries of the cluster map). In a cluster, new businesses form as a consequence of competition, demand for services, and the attraction of investors.

3. **A cluster, therefore, facilitates concentrations of producers, agribusinesses, and institutions, usually in the same sector, to work together in addressing common challenges and opportunities.** Agricultural clusters: promote vertical linkages (inputs and raw materials) and horizontal linkages (marketing and consortia); support relationships; and enhance access to market information. Benefits from a cluster development include:

- Value chain actors who have already gained substantial experience in the commodity;
- Better and more efficient access to infrastructure and skilled and specialized human resources and inputs;
- Reduction of transaction costs due to proximity (economies of scale);
- Access to information and services;
- Enhanced attraction to investments along the value chain (e.g., storage, processing, etc.); and
- Better recognition (source of origin) and marketing.

4. **The cluster approach is intended to identify policy and institutional impediments to competitiveness and innovation.** Cluster development and value chain enhancement must go hand in hand if a cluster aims to promote innovation-based competitiveness.

5. The selection of “clustered districts” for ACDP was based on the following criteria:

- Production and marketing level for the targeted commodity;
- Potential for productivity increase within sustainable production systems; and
- Potential for increased level of commercialization/marketing.

Annex 8: Selected Clusters and Districts for ACDP
UGANDA: Agriculture Cluster Development Project (ACDP)

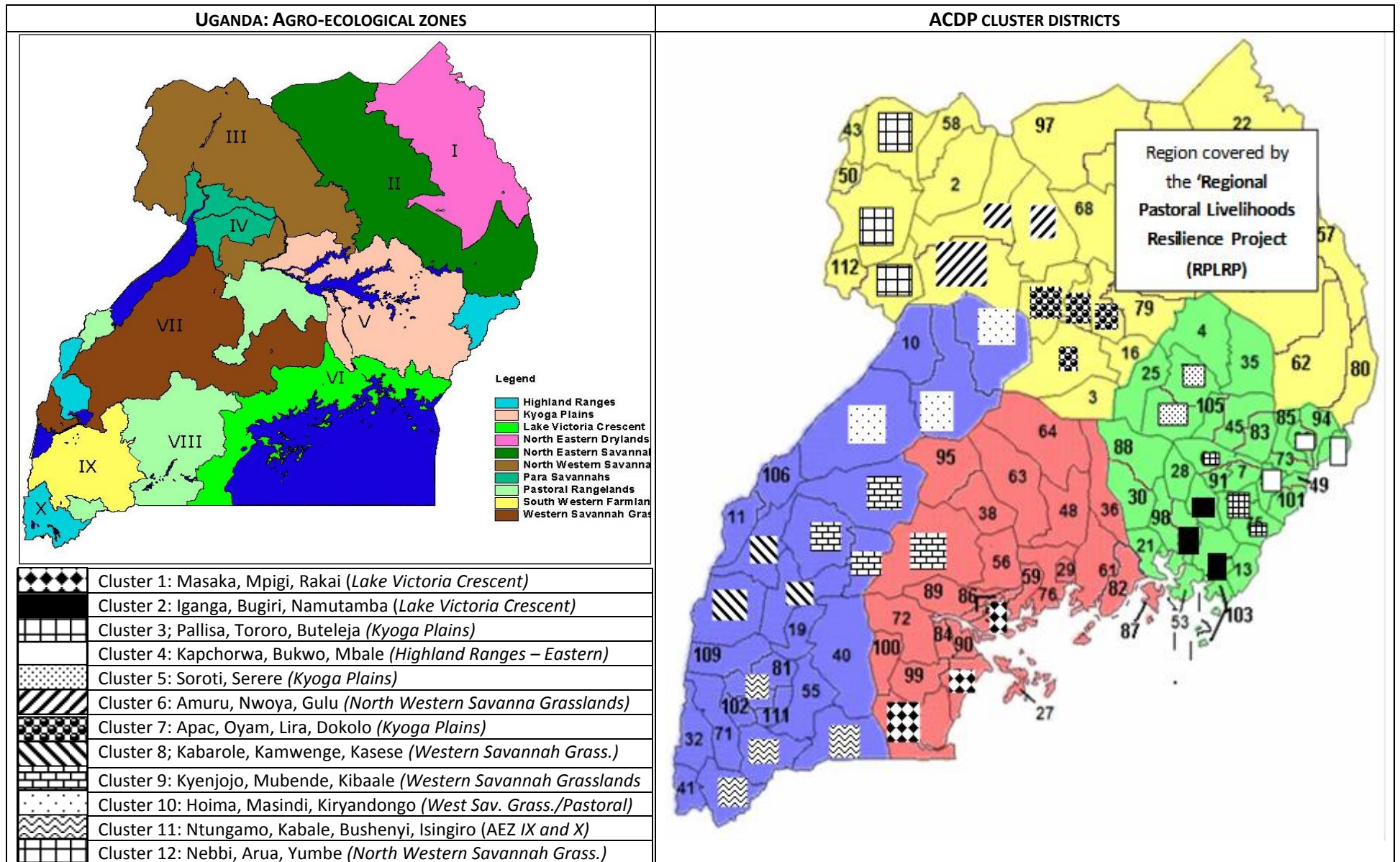
Clusters	Production of priority commodities (tons/year)/a						Kcal/pers /day /b	Households- 2009 ^b	
	Maize	Rice	Beans	Cassava	Rob. coffee (ha)	Ara. coffee (ha)		Tot. #	Size
Cluster 1	VI. Lake Victoria Crescent								
Masaka	82,287				46,000		8,323	60,500	4.1
Mpigi	19,578				14,000		3,887	47,200	4.6
Rakai	18,213				17,000		1,652	105,200	4.6
Cluster 2	VI. Lake Victoria Crescent (Namutamba – KYOGA Plains)								
Iganga	303,262	31,492		164,995	4,400		9,868	88,900	5.6
Bugiri	63,603	4,185		50,536	752		2,311	72,000	5.9
Namutamba	55,788	2,561		52,043	2,400		4,006	40,100	5.5
Cluster 3	V. KYOGA Plains								
Pallisa		22,865		33,435			2,418	61,200	5.9
Tororo		16,176		174,962			3,545	95,000	5.1
Butaleja		3,433		29,190			1,625	39,800	5.6
Cluster 4	V. KYOGA Plains								
Kapchorwa	49,904					1,740	5,303	20,900	5.5
Bukwo	45,644					75,490	7,246	12,600	5.8
Mbale	42,644					5,084	2,466	92,600	4.8
Cluster 5	V. KYOGA Plains								
Soroti & Serere		24,689					4,840	53,400	4.7
Cluster 6	III. NW Savannah Grassland and IV. Para Savannah								
Amuru (incl. Nwoya)		19,042	74,671		352		5,245	46,600	5.0
Gulu		1,997	30,744		110		1,781	70,900	5.6
Cluster 7	V. KYOGA Plains and II/III. NE/NW Savannah Grassland								
Apac (incl. Kole)			21,731	239,932	2,333		2,874	108,900	5.3
Oyam			53,008	75,593	989		2,901	70,200	5.4
Lira (incl. Dokolo)		8,009			1,215		644	76,000	7.7
Cluster 8	VIII. Western Savannah Grassland								

Clusters	Production of priority commodities (tons/year)/a						Kcal/pers /day /b	Households- 2009 ^b	
	Maize	Rice	Beans	Cassava	Rob. coffee (ha)	Ara. coffee (ha)		Tot. #	Size
Kabarole	21,729				6,700	264	5,212	86,500	4.8
Kamwenge	91,318				1,800	525	2,341	67,700	4.9
Kasese	24,196					7840	1,244	127,800	5.9
Cluster 9	VIII. Western Savannah Grassland								
Kyenjojo- Kyegweg.	54,850		33,392		3,600		2,360	74,700	7.3
Mubende	171,089		78,027		5,500		5,468	122,300	5.0
Kibaale	60,529		36,608		6,000		2,052	120,400	5.7
Cluster 10	VII. West Savannah Grassland and VIII. Pastoral Grassland								
Hoima	38,372	10,911			2,800		1,516	103,400	5.3
Masindi- Kiryandong	61,715				1,600		1,520	66,900	5.3
Cluster 11	IX. SW Farmland and X. Highland ranges								
Ntungamo			137,899		4,500		5,401	90,400	5.3
Kabale			22,227		3,200		528	102,400	4.9
Bushenyi + Isingiro			24,703		1,811		6,184	45,700	5.5
Cluster 12	III. North Western Savannah Grassland								
Nebbi				194,456		847	2,984	63,400	5.5
Arua (incl. Nyadri)				52,463			1,061	130,200	7.5
Yumbe				147,010	299	998	1,424	72,100	7.6
AVERAGE							3,237	2,614,900	5.6

/a: District total annual production for considered commodity (Season 2008/09)

/b: Source: Population Census 2008/

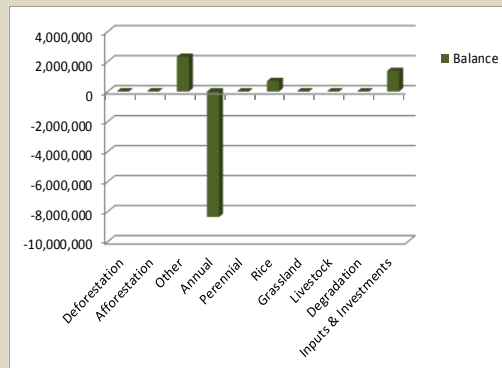
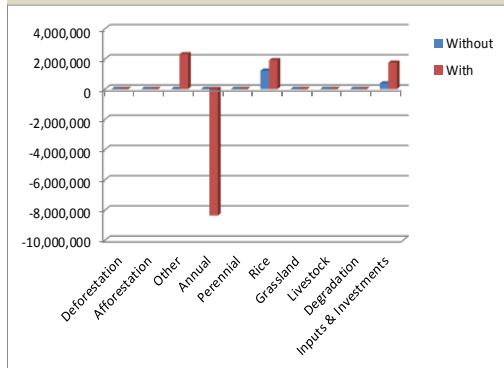
(Annex 8 continued) AEZ in Uganda and ACDP cluster districts



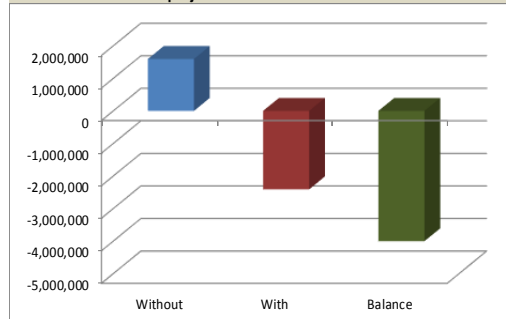
Annex 9: Preliminary Ex-Ante Carbon Balance (Exact – FAO 2013)

UGANDA: Agriculture Cluster Development Project (ACDP)

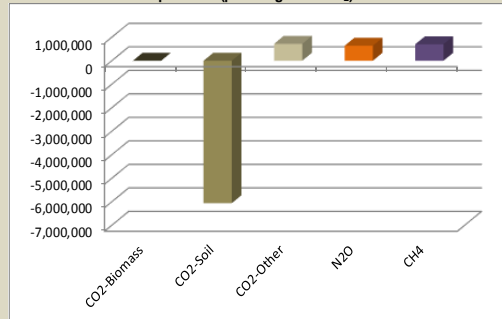
Name of the project	Agriculture Cluster Develo		Climate	Tropical (Moist)			Duration (yr)	20										
Continent	Africa		Soil	LAC Soils			Total area (ha)	1007000										
Component of the project	Gross fluxes			Share per GHG of the Balance					Results per year			Production		Emission Intensity				
	Without	With	Balance	Result per GHG			without	with	Balance	t of product		tCO ₂ eq per t of product						
	All GHG in tCO ₂ eq			CO ₂	N ₂ O	CH ₄	Balance			Without	With	Without	With					
Positive = source / negative = sink			Biomass			Soil			Other									
Land Use Changes																		
Deforestation	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
Afforestation	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
Other	0	2,307,113	2,307,113	0	2,307,113	0	0	0	0	0	115,356	115,356						
Agriculture																		
Annual	0	-8,368,360	-8,368,360	0	-8,368,360	0	0	0	0	0	-418,418	-418,418	58,880,000	85,701,970	0.00	-0.10		
Perennial	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.00	0.00		
Rice	1,218,512	1,909,804	691,291	0	0	-6,684	697,975	0	0	60,926	95,490	34,565	2,772,000	3,031,875	0.44	0.63		
Grassland & Livestocks																		
Grassland	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.00	0.00		
Livestock	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.00	0.00		
Degradation	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.00	0.00		
Inputs & Investments	376,390	1,742,264	1,365,874	720,602			645,272				18,820	87,113	68,294					
Total	1,594,903	-2,409,179	-4,004,082	0	-6,061,248	720,602	638,588	697,975				79,745	-120,459	-200,204	61,652,000	88,733,845	0.03	-0.03
Per hectare	2	-2	-4	0.7	-6.0	0.6	0.7	0.0							61.2	88.1		
Per hectare per year	0.1	-0.1	-0.2	0.0	-0.3	0.0	0.0	0.0				0.1	-0.1	-0.2	12.2	17.6		



Total without and with project and balance



Share of the balance per GHG (plus origin for CO₂)



Surfaces evolutions by land use / category (hectares - ha)

	State at the beginning		
	Without Project	With Project	
Forest/Plantation	0	0	0
Annual	920000	920000	965000
Cropland	0	0	0
Perennial	0	0	0
Rice	42000	42000	42000
Grassland	0	0	0
Other Land	0	0	0
Degraded	0	0	0
Other	45000	45000	0
Organic soils	0	0	0
Total area =	1007000	1007000	1007000

Uncertainty level

Net balance	-4,004,082
Total uncert.	5,929,406
% of uncertainty	148