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PROJECT: GAFSP: Agriculture Productivity and Market Enhancement Project (APMEP)

COUNTRY: ZAMBIA

PROJECT APPRAISAL REPORT

Date: February 2014

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Currency Equivalents

(September 2013, based on the date of the GAFSP Letter)

1 UA	=	1.51528 USD
1 UA	=	8.29811 ZMW
1 USD	=	5.47629 ZMW

Fiscal Year

1st January to 31st December

Weights and Measures

1 metric tonne (t)	=	2,204 pounds (lbs)
1 metre (m)	=	3.28 feet (ft)
1 millimetre (mm)	=	0.03937 inch
1 kilometre (km)	=	0.62 mile
1 hectare (ha)	=	2.471 acres

Acronyms and Abbreviations

AfDB	.....	African Development Bank
APMEP	.....	Agriculture Productivity and Market Enhancement Project
ASIP	.....	Agriculture Sector Investment Programme
EIRR	.....	Economic Internal Rate of Return
ESMP	.....	Environmental and Social Management Plan
FIRR	.....	Financial Internal Rate of Return
GoZ	.....	Government of Zambia
GAFSP	.....	Global Agriculture and Food Security Programme
LISP	.....	Livestock Infrastructure Support Project
M&E	.....	Monitoring and Evaluation
MAL	.....	Ministry of Agriculture and Livestock
mt	.....	Metric Tonne
NAIP	.....	National Agriculture Investment Plan
O&M	.....	Operation and Maintenance
OAG	.....	Office of the Auditor General
PRBS	.....	Poverty Reduction Budget Support
PRODAP	.....	Lake Tanganyika Integrated Regional Development Programme
PS	.....	Permanent Secretary
PTT	.....	GAFSP Project Technical Team
PY	.....	Project Year
SESA	.....	Strategic Environmental and Social Assessment
SIP	.....	Small-scale Irrigation Project
SNDP	.....	Sixth National Development Plan
UA	.....	Unit of Account
USD	.....	United States Dollars
ZMW	.....	Zambia Kwacha

Grant Information

Client's information

GRANT RECIPIENT:	Republic of Zambia
EXECUTING AGENCY:	Ministry of Agriculture and Livestock
IMPLEMENTING AGENCY:	Ministry of Agriculture and Livestock

Financing plan

Source	Amount (USD)	Amount (UA) ¹	%age	Instrument
GAFSP ²	31.12 million	20.54 million	89.3%	Grant
Government	3.61 million	2.38 million	10.3%	N/A
Beneficiaries	0.14 million	0.09 million	0.4%	N/A
Total Cost	34.87 million	23.01 million	100.0%	

Important Financial Information (GAFSP Grant)

Grant Currency	USD
Type of Interest	NA
Interest Rate Margin	NA
Commitment Charge/Fee	NA
Service Charge	NA
Tenor	NA
Grace Period	NA
FIRR, NPV (base case)	20.0%, NPV value at 12% is USD 2.8 million
EIRR, NPV (base case)	26.0%, NPV value at 12% is USD 3.2 million

Timeframe - Main Milestones (expected)

Concept Note Approval (Regional Director)	January, 2014
Project Approval	March, 2014
Effectiveness	May, 2014 (signature)
Completion	30 th June, 2019
Last Disbursement	30 th June, 2020
Last Repayment	NA (GAFSP Grant)

¹ Exchange rate UA 1 = USD 1.51528 (September 2013).

² GAFSP = Global Agriculture and Food Security Programme (Multi-Donor Trust Fund) is a multilateral mechanism aimed at scaling-up support to help poor countries alleviate poverty, improve rural livelihoods, improve food security by raising agricultural productivity, linking smallholder farmers to markets, reducing risk and vulnerability.

PROJECT SUMMARY

1.1 Project Overview: The Agriculture Productivity and Market Enhancement Project (APMEP) will be financed with Grant from the GAFSP multi-donor trust fund. APMEP will be implemented in Sinazongwe, Gwembe, Chongwe, Rufunsa, Serenje and Chitambo Districts. The sector goal is to contribute to economic growth and food security. APMEP's objectives are to contribute to economic growth and poverty reduction by enhancing food, income and nutrition security, among participating households. The Project has 3 components: (1) Agriculture Production and Productivity; (2) Value Chain Development and Market Linkages; and (3) Institutional Strengthening and will be implemented over a period of 5 years, through the existing Government of Zambia (GoZ)/Ministry of Agriculture and Livestock (MAL) structure. The Project cost is UA 23.01 (USD 34.87) million with GAFSP Grant of UA 20.54 (USD 31.12) million (89.3%), GoZ contribution of UA 2.38 (USD 3.61) million (10.3%) and beneficiaries contribution of UA 0.09 (USD 0.14) million (0.4%).

1.2 APMEP is expected to directly benefit about 75,000 people [including 33,750 women (45%) and 2,000 youths (2.7%)]. In addition, about 40,000 people will indirectly benefit along the commodity value chain. The Project will create about 450 full-time skilled/semi-skilled and 2,200 part-time unskilled jobs in agri-business, crop production, processing and marketing. The development of irrigation schemes and good agricultural practices will increase crop production and productivity. Livestock and aquaculture activities will increase availability of animal and fish products. The development of market infrastructure will facilitate sale of products. The agro-processing facilities will increase the value of produce, facilitate stable products with longer shelf life, create jobs, reduce post-harvest losses and promote industrial growth. The promotion of nutrition will curb malnutrition among under-5 children. To promote inclusive and green growth, the Project will implement the planned technical, economic and environmental activities, in a sustainable manner, and facilitate equitable allocation of resources to participating rural men, women and youths. The Project will contribute to achievement of some indicators of Millennium Development Goals #1 (eradicate extreme poverty and hunger) and #7 (ensure environmental sustainability).

1.3 Needs Assessment: In line with its strategy of economic diversification, GoZ launched a nationwide programme to scale-up agricultural development and diversification. The agriculture sector is an important source of economic growth and job creation which greatly contributes to poverty reduction in Zambia.

1.4 Bank's Added Value: The Bank's Agricultural Sector Strategy (AgSS: 2010-2014) Pillar I focuses on agricultural infrastructure. The Bank has developed experience in satisfactory development of agricultural infrastructure. Lessons learnt from the Bank's involvement in Zambia agriculture sector include the need to involve beneficiaries in infrastructure selection, siting, construction and management in order to enhance ownership and sustainability. The lessons have been mainstreamed in the design of APMEP and would be instrumental during implementation. APMEP is also in line with the Bank's Zambia CSP (2011-2015), Gender Strategy (2014-2018) and Ten Year Strategy (TYS: 2013-2022).

1.5 Knowledge Management: Knowledge gained through implementation of previous projects has been used in designing APMEP. Knowledge that will be generated through implementation of APMEP will be useful during design and management of future projects. The gained knowledge will be documented through progress reports, mid-term review report, beneficiary impact assessment report and project completion report.

RESULTS-BASED LOGICAL FRAMEWORK (PROJECT MATRIX)

Country and Project Name: Zambia: GAFSP Agriculture Productivity and Market Enhancement Project (APMEP).						
Purpose of the Project: To contribute to economic growth and poverty reduction by ensuring income, food and nutrition security, among beneficiaries.						
RESULTS CHAIN		PERFORMANCE INDICATORS			MEANS OF VERIFICATION	RISKS/MITIGATION MEASURES
		Indicator (Including CSI)	Baseline	Target		
IMPACT	1. Ensure household income, food, and nutritional security	1.1 Average household income (USD/year)	1.1 USD 364	1.1 USD 500	Household survey. Health survey.	
		1.2 Average months/year of household food scarcity	1.2 5 months	1.2 3 months		
OUTCOMES	2.1 Increased agriculture productivity 2.2 Increased agro-processing	1.3 Percentage of malnutrition (stunting) in under-5 children (%)	1.3 45%	1.3 40% (Project Districts)	Crop forecasting survey Market surveys	<u>Assumptions:</u> <ul style="list-style-type: none"> Political and economic stability. Continued Government support to agriculture. Community cooperation. Favourable climatic conditions.
		2.1.1 Average crop yield (mt/ha).	2.1.1. Maize (2.0); Cassava (9.0)	2.1.1. Maize (3.6); Cassava (12)		
OUTPUS	3. Agriculture Production and Productivity 3.1 Irrigation Schemes Developed 3.2 Aquaculture Developed 3.3 Crop Diversification and Intensification Enhanced 3.4 Livestock Development Enhanced 4. Value Chain Development and Market Linkages 4.1 Agro-processing Infrastructure Developed 4.2 Market Linkages Developed 5. Institutional Strengthening 5.1 Nutrition security and capacity Building Improved 5.2 Project Management Improved 5.3 M&E System established	2.2 (i) percentage of primary products processed locally by women and men (%); and (ii) value of processed products by women and men (ZMW)	2.1.2 Goats (2,000); Poultry (100,000)	2.2. (i) 30; and (ii) ZMW 2,000	Project Progress Reports	<u>Risk:</u> Environmental degradation and climate change; <u>Mitigation:</u> sustainable management of pasture/fodder and rangelands, Climate proof APMEP. <u>Risk:</u> Poor performance of contractors <u>Mitigation:</u> (i) use stringent evaluation process, and (ii) follow-up contract execution, (iii) determine how many on-going contracts the bidding contractor has, and (v) report any contractor who performs poorly, to the Zambian Contractors Registration Board, for possible blacklisting. <u>Risk:</u> Poor sustainability of infrastructure and irrigation/agro processing equipment. <u>Mitigation:</u> Establish management entity of infrastructures. Stock highly consumable equipment-spare parts in agriculture service centres. Provide O&M training to direct beneficiaries.
		3.1.1 Scheme area under irrigation (ha) 3.1.2 No of beneficiaries (farmers). 3.1.3 No of scheme management entities.	3.2 (i) Fish pens (no); (ii) fish cages (no); and (iii) fish production (mt/yr) 3.3 (i) Area under conservation agriculture (ha); (ii) Seed supplied (pkt); (iii) area under mechanised agriculture (ha). 3.4 (i) No of livestock pass-on scheme women/youth groups; (ii) No of poultry keeping groups.	<u>Project Area (2013)</u> 3.1.1 (410) 3.1.2 (2,050) 3.1.3 (0) 3.2 (i) 0; (ii) 0; (iii) 120 3.3 (i) 25,430; (ii) 0; (iv) 47,200 3.4 (i) 0; (ii) 0 4.1 (i) 0; (ii) 0; (iii) honey presses (0), solar dryers (0); (iv) cassava (4%), maize (12%) 4.2 (i) 0; (ii) 310; (iii) 0; (iv) 0. 5.1.1 (i) 400 FHH; and (ii) 210 MHH 5.1.2 (0) 5.1.3 (0) 5.2 (0) 5.3 (0)			Project Area (2019) 3.1.1 (3,337) 3.1.2 (14,565) (at least 45% women, in all activities) 3.1.3 (10) 3.2 (i) 280; (ii) 340; (iii) 400 (>45% women, in all activities) 3.3 (i) 32,730; (ii) 13,500; (iii) 69,000 (>45% women beneficiaries, in all activities) 3.4 (i) 70 (60 women & 10 youth groups); (ii) 120 (80% women & 20% youths) 4.1 (i) 2; (ii) 2; (iii) honey presses (40), solar dryers (70); (iv) cassava (2%), maize (8%) (at least 45% women beneficiaries, in all activities) 4.2 (i) 6; (ii) 327; (iii) 50; (iv) 60 (at least 45% women, in all activities) 5.1.1 (i) 550 FHH and (ii) 1,210 MHH. 5.1.2 (1,600) 5.1.3 (16,800) (at least 50% women) 5.2 (1) 5.3 (1)
KEY ACTIVITIES	Components				Inputs	
	Component 1: Agriculture Production and Productivity. Sub-component 1.1 Irrigation and Livestock Development; and 1.2 Crop Diversification and Intensification. Component 1 cost: UA 14.53 (USD 22.02) million (63.2%). Component 2: Value Chain Development and Market Linkages. Sub-component 2.1 Agro-processing Infrastructure Development; and 2.2 Market Linkages. Component 2 cost: UA 3.96 (USD 6.00) million (17.2%). Component 3: Institutional Strengthening. Sub-component 3.1 Nutrition Security and Capacity Building; 3.2 Project Management, Monitoring and Evaluation. Component 3 cost: UA 4.52 (USD 6.85) million (19.6%).				Project Cost: UA 23.01 (USD 34.87) million GAFSP Grant: UA 20.54 (USD 31.12) million (89.3%). Government: UA 2.38 (USD 3.61) million (10.3%). Beneficiaries: UA 0.09 (USD 0.14) million (0.4%).	

PROJECT TIME FRAME/GENERAL IMPLEMENTATION SCHEDULE

No	Description of Activities	2014				2015				2016				2017				2018				2019			
		Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4
	Component 1: Agriculture Production and Productivity																								
1	Irrigation Development																								
1.1	Construction of Irrigation Schemes																								
1.2	Establishment of Scheme Management Entities																								
1.3	Aquaculture (fish farming) Activities																								
1.4	Environmental and Social Management Activities																								
2	Crop Diversification and Intensification																								
2.1	Conservation Agriculture																								
2.2	Farm Mechanisation																								
2.3	Crop Diversification and Intensification																								
3	Livestock Development																								
3.1	Livestock pass-on Scheme (Goats and Sheep)																								
3.2	Poultry Management (incl vaccinations)																								
	Component 2: Value Chain Development & Market Linkages																								
4	Agro-processing Infrastructure Development																								
4.1	Establishment of Maize/Feed and Cassava Mills																								
4.2	Community-level Value Addition/Processing																								
5	Market Linkages																								
5.1	Agro-market Centres and Road-side Markets																								
5.2	Support Agro-Market Information System																								
	Component 3: Institutional Strengthening																								
6	Nutrition Security and Capacity Building																								
6.1	Community Nutrition Education/Outreach																								
6.2	Staff and Farmer Training																								
7	Project Management																								
7.1	Project Implementation																								
7.2	Development of Annual Work Plans and Budgets																								
7.3	Bank: Supervision Missions																								
8	Monitoring and Evaluation																								
8.1	Development and Management of M&E system																								
8.2	Development of Annual Work Plans and Budgets																								
8.3	Baseline Survey, and Gender Survey																								
8.4	Annual Financial Audit																								
8.5	Mid-Term Review, Gender Audit and Nutrition Audit																								
8.6	Beneficiary Impact Assessment																								
8.7	Project Completion Mission (PCR)																								
8.8	Progress Review Meetings (National & Provincial)																								

Note: Q1 = First Quarter (January, February, March); Q2 = Second Quarter (April, May, June); Q3 = Third Quarter (July, August, September) and Q4 = Forth Quarter (October, November, December)

**REPORT AND RECOMMENDATION OF THE MANAGEMENT OF THE ADB GROUP
TO THE BOARD OF DIRECTORS ON PROPOSED GAFSP GRANT FOR THE
ZAMBIA AGRICULTURE PRODUCTIVITY AND MARKET ENHANCEMENT
PROJECT (APMEP)**

Management submits the following Report and Recommendation of a Grant proposal of UA 20.54 (USD 31.12) million from the Global Agriculture and Food Security Programme (GAFSP) resources to finance the Agriculture Productivity and Market Enhancement Project (APMEP) in Zambia.

I – STRATEGIC THRUST & RATIONALE

1.1. Project Linkages with Country Strategy and Objectives

1.1.1. The GoZ's development agenda is articulated in the National Vision 2030 which reflects Zambia's aspirations and determination to be a prosperous middle-income country by year 2030. The Sixth National Development Plan (SNDP: 2011-2015), which operationalizes the National Vision 2030, aims to increase agriculture production, create jobs and promote commodity value chain development. The contribution of agriculture sector to GDP is 21.5% and enhances poverty reduction and economic growth. Considering that low agricultural productivity, weak commodity value chain development and poor market linkages are the main constraints in the agriculture sector, the Project aims at contributing to the GoZ's efforts of increasing crop diversification, productivity, processing and improving market linkages. The Project is in line with the Zambia SNDP (2011-2015), National Agriculture Policy (NAP 2004), National Agriculture Investment Plan (NAIP: 2014-2018), National Gender Policy (2000), Food and Nutrition Policy (2006), National Food and Nutrition Strategic Plan (2011-2015), and the First 1,000 Most Critical Days (2013-2015). The Zambia comparative socio-economic indicators are reflected in Appendix 1.

1.1.2. The Project is aligned to the Bank's Results-Based Country Strategy Paper (CSP: 2011-2015) that emphasises the need to develop the Zambia Productive Sector by supporting economic diversification through infrastructure development (Pillar 1), and supporting economic and financial governance (Pillar 2). It is also in line with the Bank's Agriculture Sector Strategy (AgSS: 2010 - 2014), Gender Strategy (2014-2018), and Ten Year Strategy (TYS: 2013-2022). The TYS has five core operational priorities to achieve its twin objectives of inclusive growth and gradual transition to green growth, thus infrastructure development, regional integration, private sector development, Governance and accountability, skills and technology, with special emphasis on fragile states, agriculture & food security and gender.

1.2. Rationale for Bank's Involvement

The Project aims at contributing to the GoZ's efforts of increasing crop diversification, productivity, processing and improving market linkages. The Project will mainly contribute to core operational priority of infrastructure development and will ensure proper Governance and accountability in its implementation. The Project also responds to the TYS (2013-2022) special emphasis on agriculture and food security and is aligned to the GAFSP whose goal is to enable participating developing countries raise agricultural productivity, link farmers to markets, strengthen the technical capacity of institutions to plan and develop appropriate agricultural policies, reduce risks and vulnerability of the most vulnerable populations, and improve non-farm rural livelihoods thereby enhancing household food and nutrition security. The Bank has considerable experience through satisfactory development of agricultural infrastructure across the continent. Lessons learnt from the Bank's involvement in Zambia agriculture sector include the need to involve beneficiaries in infrastructure selection, siting, construction and

management in order to enhance ownership and sustainability. The lessons have been mainstreamed in the design of APMEP. The 2012 Country Portfolio Performance Review (CPPR) rated the overall portfolio performance as satisfactory, with implementation objectives and development outcomes of 2.19 and 2.52 respectively. Given the Bank's successful involvement in Zambia's agricultural sector, it was selected by the country as the Supervising Entity for the GAFSP Project. Appendix 2 presents the Bank's active portfolio, in Zambia, which has prompted the continued support to the agriculture sector.

1.3. Donors Coordination

The development partners who are active in the agriculture sector, in Zambia, comprise EU, FAO, Finland, JICA, World Bank, AfDB, WFP, IFAD, USAID, Sweden and Norway. They have formed a Cooperating Partner (CP) Group which ensures coordinated and effective communication with GoZ. The CPs' contribution to the agriculture budget was about 30% (UA 70 million) in 2012 which was coordinated by the Ministry of Finance. The contribution of each CP in the agriculture sector is indicated in Table 1.1. The Agriculture CP Group (Ag-CP), whose current chair is the EU, has been coordinating activities in the sector and engaging Government in dialogue on key policy developments. The CPs played a key role in the design of NAIP (2014-2018) and APMEP. Finland is willing to co-finance some of the APMEP activities, especially institutional and management support to irrigation schemes. The World Bank and JICA are funding development of irrigation schemes in other Districts. The EU is strengthening MAL institutional capacity. EU and FAO are supporting Agriculture Service Centres, Conservation Agriculture Scaling-up Project and MAL Nutrition Unit. USAID is funding Feed the Future Project. The Bank works closely with other CPs, in order to enhance collaboration and leverage additional resources, notably (i) various CPs in the Poverty Reduction Budget Support (PRBS), (ii) Finland (small-scale irrigation project), (iii) GoZ, Botswana Government and JICA (Kazungula bridge project), (iv) EU (Nacala corridor road project), and (v) EIB, DBSA and AFD (Itezhi Tezhi hydro-power generation and transmission line project). The current CPs' activities are indicated in Appendix 3.

Table: 1.1 Donor Support to Agriculture (2012)

Sector or subsector*	Size		
	GDP	Exports	Labour Force
Agriculture	21	20	67
Players - Public Annual Expenditure (average) : 2012 Budget			
	Government	Donors	
UA m	UA 229.4 m	UA 70.0 m	AfDB 3.4% WB 36.3% EU 4.7% DFID 5.1%
%	70.0%	30.0%	FAO 1.1% JICA 3.4% WFP 9.3% IFAD 17.4%
			Finland 4.4% USAID 7.9% Norway 7.0%
Level of Donor Coordination			
Existence of Thematic Working Groups (this sector/sub-sector)			[Y]
Existence of SWAps or Integrated Sector Approaches			[N]
ADB's Involvement in Donors Coordination			[M]

Key: L: Leader. M: Member but not leader. N: No involvement. Y: Yes. N: No.

II – PROJECT DESCRIPTION

2.1. Project Objectives and Components

The Project objectives are to contribute to economic growth and poverty reduction by ensuring food, income and nutrition security, among beneficiaries. The Project has 3 components: (i) Agriculture Production and Productivity which will focus on development of

irrigation, aquaculture and livestock, crop diversification and intensification (63.2% of Project cost); (ii) Value Chain Development and Market Linkages which will promote agro-processing, value chain development, agriculture service centres, and market linkages (17.2% of Project cost); and (iii) Institutional Strengthening which will focus on food and nutrition security, Project management, monitoring and evaluation (19.6% of Project cost). Gender issues have been considered in all the planned activities. The Project summary is indicated in Table 2.1.

Table 2.1: Description of Project Components and Sub-components

{Notes (i) Unless stated, for each activity, the Project is targeting at least 45% of the beneficiaries to be women; and (ii) details of the activities (quantities) are provided in PAR Volume II Annex B.2, Detailed Cost Tables}.

No	Component Name	Cost (million) and % allocation	Sub-Component Description and Costs (UA and USD million & % allocation)
1	Agriculture Production and Productivity	UA 14.53 (USD 22.02) (63.2%)	<p><u>Sub-component 1.1: Irrigation Development [UA 12.69 (USD 19.23) million, 55.2%]</u> Develop 10 small-scale irrigation schemes (Category 1), refer to Appendix 4, covering about 2,032 ha with 4,115 rural farmers including scheme management entities and 56 community-level mini-scale irrigation schemes (Category 2, less than 20ha each) covering 895ha benefiting 8,400 farmers. Aquaculture activities: install 280 fish pens and 340 fish cages benefiting 16,000 people. Implement Environmental and Social Management Plan (ESMP) and watershed management activities.</p> <p><u>Sub-component 1.2: Crop Diversification and Intensification [UA 0.95 (USD 1.44) million, 4.1%]</u> Carry out conservation agriculture (4,300 ha, 12,000 smallholder farmers). Promote crop diversification (5,300 ha, 16,000 farmers) through - seed multiplication (13,000 packets). Promote farm mechanisation on 12,800ha (benefiting 17,000 farmers). Promote crop intensification on 6,700ha, (benefiting 15,800 farmers) using e-voucher system.</p> <p><u>Sub-component 1.3: Livestock Development [UA 0.89 (USD 1.35) million, 3.9%]</u> Carry out livestock (goats/sheep) pass-on scheme for 180 women groups (3,600 women) and 30 youth groups (600 youths). Recruit NGO for livestock pass-on scheme. Support poultry (village/local chickens) management for 3,000 women and 200 youth poultry keepers. Provide thermal stable Newcastle vaccine and conduct vaccination campaign. Promote use of Community Animal Health Workers and Community Livestock Assistants through training and start-up drug boxes.</p>
2	Value Chain Development and Market Linkages	UA 3.96 (USD 6.00) (17.2%)	<p><u>Sub-component 2.1: Agro-processing Infrastructure Development [UA 2.51 (USD 3.80) million, 10.9%]</u> Establish 2 small-scale maize and feed mills, and 2 small-scale cassava mills with management entities. Procure community-level value addition equipment (40 honey presses and 70 solar dryers for rural women and youth groups). Support 60 existing agro-dealers with matching grant.</p> <p><u>Sub-component 2.2: Market Linkages [UA 1.45 (USD 2.20) million, 6.3%]</u> Establish 6 small-scale agriculture service (agro-market) centres (ASC). Upgrade 12 roadside markets to directly benefit 680 people. Rehabilitate 50km rural feeder roads. Set-up agriculture market information system using mobile phones.</p>
3	Institutional Strengthening	UA 4.52 (USD 6.85) (19.6%)	<p><u>Sub-component 3.1: Nutrition Security and Capacity Building [UA 1.92 (USD 2.91) million, 8.3%]</u> Provide nutrition education and nutrition outreach to the participating communities. Train community nutrition/health workers (80% women). Provide 13,000 women and 2,000 men with orange fleshed sweet potato vines. Develop Nutrition Information and Monitoring System.</p>

No	Component Name	Cost (million) and % allocation	Sub-Component Description and Costs (UA and USD million & % allocation)
			<p><u>Sub-component 3.2: Project Management [UA 1.32 (USD 2.00) million, 5.7%]</u> Support in-house MAL GAFSP Project Technical Team (PTT). Project management including supervision.</p> <p><u>Sub-component 3.3: Monitoring and Evaluation [UA 1.28 (USD 1.94) million, 5.6%]</u> Conduct baseline survey. Gender assessment survey. Develop Project M&E system. Produce progress reports. Conduct gender audit. Beneficiary impact assessment. Prepare annual work plans and budgets.</p>
	Total	UA 23.01 (USD 34.87)	

2.2. Technical Solutions Retained and Other Alternative Explored

The technical solutions which were retained have been included in the Project design whilst other alternative which was explored is indicated in Table 2.2.

Table 2.2: Other Alternative Considered and Reason for Rejection

No	Alternative Name	Brief Description	Reason for Rejection
1.	Focus on improving crop productivity rather than a value chain approach	The resources available would be focused on improving crop productivity so that crop output is raised	Targeting the value chain approach to improve crop, livestock and fisheries productivity and market linkages is more sustainable. Different Districts have different comparative advantages and combinations of enterprises.

2.3. Project Type

APMEP is a stand-alone investment Project aimed at development of irrigation and aquaculture, promotion of crop and livestock production and productivity, agro-processing and value addition, market linkages, men, women and youth participation and enhancement of household income, food and nutrition security.

2.4. Project Cost and Financing Arrangements

2.4.1 The Project cost, including physical and price contingencies, is UA 23.01 (USD 34.87) million which will be financed by (i) GAFSP Grant of UA 20.54 (USD 31.12) million (89.3%) covering all major Project activities, (ii) the GoZ contribution of UA 2.38 (USD 3.61) million (10.3%) through staff salaries, office space and utilities, and (iii) beneficiaries in-kind contribution of UA 0.09 (USD 0.14) million (0.4%) in watershed management and maintenance of community-level equipment and irrigation schemes. The price contingencies were based on actual and projected local and foreign inflation rates of 10% and 2% per annum, respectively. The physical contingencies ranged from 0% (salaries) to 10% (works) based on common technical practices. Summary of the Project costs by components, sources of financing, expenditure categories and schedule by component are presented in Tables 2.3 to 2.6. The Detailed Cost Tables are in Appraisal Report Volume II (Technical Annex B.2).

2.4.2 Justification for Local Cost Financing: The GAFSP Grant will finance about 70.9% [UA 6.04 (USD 9.15) million] of total local costs and 100% [UA 14.50 (USD 21.97) million] of total foreign costs. The local cost is high because the Project is oriented towards agricultural production and development of rural infrastructures using locally available materials. The GoZ

does not have capacity to finance the entire local cost. Consequently, all infrastructure development costs will be financed by GAFSP Grant.

Table 2.3: Project Cost Estimates by Components (ZMW, UA and USD million)

Component Name	(ZMW million)			(UA million)			(USD million)			% Foreign Cost
	Local	Foreign	Total	Local	Foreign	Total	Local	Foreign	Total	
1. Agriculture Production and Productivity	24.01	80.96	104.97	2.89	9.76	12.65	4.39	14.78	19.17	77
2. Value Chain Development and Market Linkages	11.02	17.69	28.71	1.33	2.13	3.46	2.01	3.23	5.24	62
3. Institutional Strengthening	25.33	7.10	32.43	3.05	0.86	3.91	4.63	1.30	5.93	22
Total Baseline Costs	60.36	105.75	166.11	7.27	12.75	20.02	11.03	19.31	30.34	64
Physical Contingencies	2.40	9.68	12.08	0.29	1.16	1.45	0.44	1.77	2.21	80
Price Contingencies	7.81	4.89	12.70	0.95	0.59	1.54	1.43	0.89	2.32	38
Total Project Costs	70.57	120.32	190.89	8.51	14.50	23.01	12.90	21.97	34.87	63

Table 2.4: Sources of Financing (Amount in UA and USD million)

Source of Financing	Total Amount (UA and USD million) and Percentage Contribution (%)								
	Local			Foreign			Total		
	UA	USD	%	UA	USD	%	UA	USD	%
GAFSP Grant	6.04	9.15	70.9	14.50	21.97	100.0	20.54	31.12	89.3
Government	2.38	3.61	28.0	-	-	-	2.38	3.61	10.3
Beneficiaries	0.09	0.14	1.1	-	-	-	0.09	0.14	0.4
Total	8.51	12.90	100.0	14.50	21.97	100.0	23.01	34.87	100.0

Table 2.5: Project Cost by Categories of Expenditure (UA and USD million)

Expenditure Category	Amount (UA million)					Amount (USD million)				
	GAFSP Grant	GoZ	Benef.	Total	For'n Cost	GAFSP Grant	GoZ	Benef.	Total	For'n Cost
A. Works	12.86	-	-	12.86	12.44	19.49	-	-	19.49	18.85
B. Goods										
Vehicles	0.24	-	-	0.24	0.19	0.36	-	-	0.36	0.30
Equipment	1.31	-	-	1.31	0.79	1.99	-	-	1.99	1.19
Sub-total	1.55	-	-	1.55	0.98	2.35	-	-	2.35	1.49
C. Services										
Training	2.45	-	-	2.45	-	3.71	-	-	3.71	-
Consultancy	1.98	-	-	1.98	0.83	3.00	-	-	3.00	1.25
Audit	0.25	-	-	0.25	0.25	0.38	-	-	0.38	0.38
Sub-total	4.68	-	-	4.68	1.08	7.09	-	-	7.09	1.63
D. Operating Costs	1.45	2.38	0.09	3.92	-	2.19	3.61	0.14	5.94	-
Total Project Costs	20.54	2.38	0.09	23.01	14.50	31.12	3.61	0.14	34.87	21.97

Table 2.6: Expenditure Schedule by Components (UA and USD million)

Component Description	Amount in UA million						Amount in USD million					
	PY1	PY2	PY3	PY4	PY5	Total	PY1	PY2	PY3	PY4	PY5	Total
1. Agriculture Production and Productivity	1.88	3.28	4.91	2.21	0.37	12.65	2.84	4.97	7.45	3.35	0.56	19.17
2. Value Chain Development and Market Linkages	0.59	1.31	1.09	0.24	0.23	3.46	0.89	1.98	1.67	0.36	0.34	5.24
3. Institutional Strengthening	0.99	0.72	0.79	0.64	0.77	3.91	1.50	1.09	1.21	0.96	1.17	5.93
Total Baseline Costs	3.46	5.31	6.79	3.09	1.37	20.02	5.23	8.04	10.33	4.67	2.07	30.34
Physical Contingencies	0.22	0.40	0.56	0.22	0.05	1.45	0.33	0.61	0.85	0.34	0.08	2.21
Price Contingencies	0.06	0.25	0.51	0.40	0.32	1.54	0.09	0.37	0.76	0.61	0.49	2.32
Total Project Costs	3.74	5.96	7.86	3.71	1.74	23.01	5.65	9.02	11.94	5.62	2.64	34.87

2.5. Project Target Area and Population

2.5.1. Project Areas: The Project will be implemented in 6 Districts, namely, Sinazongwe, Gwembe, Chongwe, Rufunsa, Serenje and Chitambo (Appendix 5) with a total area of 40,759 km² (4,075,900 ha). According to 2010 census, the 6 Districts had total population of 503,291 people (49% male and 51% female) who are predominantly farmers. The main criteria for selection of these Districts include poverty, food insecurity, malnutrition, vulnerability to climate change, and potential for crop diversification and economic growth.

2.5.2. Project Beneficiaries: The estimated total number of direct beneficiaries is 75,000 rural people including 33,750 (45%) women. The Project components support each other, as a result, some people will benefit from more than one intervention. In addition, about 40,000 people will indirectly benefit from the Project along the commodity value chain development. About 2,000 (2.7%) rural youths who presently lack employment will be targeted by the Project through income generating activities. The Project is expected to create at least 450 full-time skilled/semi-skilled and 2,200 part-time unskilled jobs in production, processing and marketing which will benefit men, women and youths.

2.6. Participatory Process for Project Identification, Design and Implementation

The Project was identified through development of the Zambia GAFSP Proposal (May 2013) that was curved out of the Zambia NAIP and submitted to the GAFSP Technical Advisory Committee (TAC) in June 2013. The Bank Mission and GoZ GAFSP Project Technical Team (PTT), which was established during the preparation of NAIP, extensively consulted key stakeholders at National, Provincial and District levels including organisations dealing with gender and nutrition. The Proposal was debated at a consultative workshop attended by agriculture sector stakeholders including CPs, Government, private agri-business, and Zambia National Farmers Union (ZNFU) representatives. The Project was prepared in October/November 2013 during which the Mission consulted MAL staff, CPs, gender and nutrition CSOs/NGOs, farmers, community members and private sector active in agriculture production and agro-processing. A consultative workshop was held during the Mission to discuss the Project design including definition of key components, activities, implementation and sustainability arrangements. The outcome of these consultations largely informed the

selection of Project Districts and definition of components including activities. The Project was also prepared with respect to the GAFSP Guidelines (3rd Call for Proposals, 1st March 2013) and TAC's observations (Appendix 6) on the Zambia Proposal (2013). Project implementation will be carried out, in a participatory manner, through the GoZ's existing structures with full involvement of direct beneficiaries.

2.7. Bank Group Experience and Lessons Reflected in Project Design

The Bank has gained infrastructure development experience during design and implementation of projects in Zambia, namely, SIP, ASIP, PRODAP and LISP as well as other similar GAFSP-funded projects in Malawi, Niger, Liberia, Senegal and the Gambia. The lessons learnt and actions taken during APMEP design are tabulated below:

No	Lessons Learnt	Actions incorporated in the Project design
1.	Lack of drawings at project start-up resulted in delay in implementation.	Tender documents including construction drawings for Simupande irrigation scheme (expansion) are available. The remaining schemes will be prepared during PY1.
2.	Role played by ASIP implementation unit in expediting project execution after a delay in start-up when implementation was entrusted to MAL	MAL's Project implementation capacity will be enhanced through recruitment of 3 local experts (Project Coordinator, Procurement Specialist and Accountant) who will be part of in-house GAFSP PTT.
3.	Inadequate consultation with stakeholders in selection of sites results in poor siting of the infrastructure.	Adequate consultations with key stakeholders, including beneficiaries, were undertaken during Project identification and preparation phases.
4.	Weak M&E system results in poor assessment of implementation progress	M&E activities with adequate financial allocation have been included in Project design, sub-component 3.2.
5.	Lack of irrigation scheme management structures compromises sustainability.	Establishment of management entities has been included in Project design and the process will commence in PY2.

2.8. Project Performance Indicators

The Logframe's output, outcome and impact indicators will be measured in 2019, 2020 and 2022, respectively. The said indicators will be monitored using the APMEP M&E system, as per sub-section 4.2. The impact indicators include average household income (USD/year), average months/year of household food scarcity and percentage of malnutrition (stunting) in under-5 children (%). The outcome indicators include crop yield (mt/ha), livestock off-take per year (no) and agricultural value addition (% and ZMW). Major output indicators include: developed area under irrigation; aquaculture (fish) production; crop diversification and intensification; livestock production; agro-processing infrastructure; and market centres.

III – PROJECT FEASIBILITY

3.1. Economic and Financial Performance

3.1.1. The economic and financial analysis was based on the incremental net benefit arising from Project investment. The main assumption underlying the economic and financial analysis is an anticipated increase in productivity of crops, livestock and fish as a result of modernization of the farming systems, including irrigation, development of value addition related infrastructure and improvement of agricultural, fisheries and livestock service delivery patterns.

3.1.2. The production costs were derived from the (i) Irrigation Subsector Study funded by AfDB, (ii) Suitability and Economic Viability Study of the ASC (ZNFU), and (iii) computed field data from Zambia. Prevailing 2013 market prices were used for input and output. The

O&M costs including pumping cost have been incorporated in the crop budgets. The other assumptions include: (i) maize was treated in the analysis, as a traded good since it offers an important export potential; and (ii) post-harvest losses are 30%. All Project costs and prices were estimated on the basis of constant market prices for a span of 25 years. For the economic analysis, (i) maize was considered as a traded good and its market price was adjusted to reflect its economic value; (ii) for the other crops, the market prices were used since they were not import substitutes; (iii) the unskilled labour wage in the mining sector was used to assess the cost of family labour used in the farm and, (iv) all subsidies were excluded. The Financial Internal Rate of Return (FIRR) and Economic Internal Rate of Return (EIRR), at a capital opportunity cost of 12%, are tabulated below. The input subsidy by GoZ explains the large difference between the FIRR and the EIRR. The sensitivity analysis was carried out which showed that both EIRR and FIRR are sensitive to change in prices and, to some extent, cost variation.

FIRR, NPV (base case)	20.0% : USD 2.8 million
EIRR, NPV (base case)	26.0% : USD 3.2 million

Note: detailed calculations are available in Appendix 7 and Technical Annex B.7.

3.1.3. At the farmer level, the Project aims to achieve an incremental net income of USD 100 from rainfed agriculture (once a year) and USD 650 under irrigation per growing season (at least twice a year). Additional USD 64 per year will accrue to poultry-keeping and USD 545 per year to sheep/goat-keeping farmers. In addition, the fish cage/pen developers and fish farmers will generate USD 662 and USD 1,923 per year, respectively. Other benefits will include job creation in commodity value chain activities and during construction activities.

3.2. Environmental and Social impacts

3.2.1. Environment: APMEP was classified as Category 2 (ORQR.3: 7th October 2013) according to the Bank's Environmental and Social Assessment Procedures (ESAP) implying that the negative environmental and social impacts will be localized, minimal, short term, manageable, reversible and can be mitigated during implementation. The Project has triggered 9 of the Bank's key Environmental Policy issues as indicated in Appendix 8. The potential negative impacts include disturbance of soil and vegetation, pollution from use of fertilisers and waste generation from value chain activities. However, the planned activities have been designed to impart minimal disturbance to the environment and mitigation measures include limiting vegetation clearing to the utmost necessary situations, carrying out land and water conservation works and proper handling of value addition waste. The potential positive impacts include (i) improving marginally productive land into full production through irrigation and good agricultural practices, (ii) improving livelihoods of rural farmers, and (iii) improving the micro-climate through watershed management. The Strategic Environmental and Social Assessment (SESA) report and Environmental and Social Management Plan (ESMP) have been produced by the Environmental Specialist (Consultant). The Project has allocated UA 92,300, from GAFSP resources, for mitigation measures including training of participating staff and rural farmers. The said amount is in addition to the amounts which will be included in the Contractors' civil works contracts (bills of quantities) for mitigation measures.

3.2.2. Climate Change: Zambia has recently experienced a wide range of climate risks such as flooding and dry spells which have affected agricultural production, water quantity and quality and livelihoods of the rural population considering that agriculture is their major source of food crops and income. APMEP will facilitate climate change adaptation, within participating Districts, in order to improve resilience through support to (i) watershed management, (ii) conservation agriculture, and (iii) planting drought tolerant crops such as cassava which will improve agricultural production, household income, food and nutrition security.

3.2.3. Gender: Zambia population is about 14 million (2013) out of which 51% are women. The Zambia's Gender Policy (2000) recognizes the need for equal and full participation of women and men at all levels of national development. The SNDP (2011-2015) entrenches gender as one of the cross-cutting issues and prioritizes the need to mainstream gender in the development process. The 2012 UNDP Gender Inequality Index (GII) which reflects gender-based inequalities in reproductive health, empowerment, and economic activity classified Zambia with a value of 0.623 (136 out of 148 countries) considering that (i) women held 11.5% of parliamentary seats, (ii) 25.7% of women reached secondary/higher level of education compared to 44.2% men, (iii) for every 100,000 live births, 440 women died from pregnancy related causes, (iv) adolescent fertility rate was 138 births per 1,000 live births, and (v) female participation in labour market was 73.2% compared to 85.6% for men.

3.2.4. Women play a vital role in ensuring household food and nutrition security but face constraints in accessing land, financial services, extension services and markets. In Zambia, the decision to grow most crops is taken by both husband and wife but women tend to make decisions on food crops whilst men dominate on cash crops. Review of on-going and closed projects implemented by MAL with regard to gender impact have lessons including (i) a Logframe with gender disaggregated data is critical for monitoring impact, (ii) the need to promote gender friendly labour saving technologies, and (iii) empowerment programmes directed at women and youths to access resources. The lessons have been incorporated into the Project design by (i) disaggregating Logframe data, (ii) promoting labour saving technologies like farm mechanisation, (iii) providing community-level processing (value addition) equipment like honey presses and solar dryers, and (iv) ensuring participation of women, men and youths in empowerment activities. The Project will support, at least, 45% participation of women and provide appropriate training including business skills and financial management. The Project will devise gender monitoring and results tracking system to assess the impact on women. Although women and female farmers will participate in all Project activities, aggregate funds allocated to their main specific activities (livestock pass-on scheme, nutrition education and community-level agro-processing) are about UA 2.77 million (11.99% of the total cost).

3.2.5. Nutrition Security: Malnutrition remains high in Zambia with stunting at 45% in under-5 children beyond the acceptable cut-off point of 20% and most of them have vitamin A, iron and iodine deficiencies. The Project will respond to malnutrition situations through (a) food based approach, and (b) nutrition education. It will also promote women in achieving food and nutrition security which will contribute to reduction of stunting from 45% to 40% by 2019, among under-5 children, in the participating 6 Districts. The **food based approach** will involve (a) production of orange and yellow fleshed fruits, legumes, dark green vegetables, soya beans, cassava, and groundnuts to meet nutritional requirements, and (b) training of women groups in processing, storage and utilisation of crops. In addition, goat milk will be used for preparation of complementary food for infants (6-24 months-old). The **nutrition education** will involve (i) promotion of nutrition programmes through selected school clubs which is a viable way of reaching the entire household, (ii) infant feeding training sessions targeting parents (husband and wife) on best feeding practices, (iii) training of community based nutrition facilitators. Nutrition audit will be carried out in PY3 to assess the (i) reduction in proportion of underweight children, and (ii) beneficiaries' nutrition knowledge in food access and utilization.

3.2.6. Social: The social impact of the APMEP is expected to be positive since it will provide income and better livelihoods to participating men, women and youths through diversification of agricultural output. Other positive effects will include an improvement in household nutrition and food security. Rehabilitation of rural feeder roads will improve agro-trade, and also provide access to amenities like schools and hospitals. The increased economic activities will boost local development and generate positive multiplier effects on social stability by retaining the youths, within the participating Districts, who could have otherwise migrated to cities.

3.2.7. Inclusive Growth: In the context of broad-based and pro-poor growth, the Project will promote inclusive growth with equitable allocation of resources to activities which will benefit all levels of the participating communities. In particular, the Project will be implemented in some parts of the country frequently affected by drought but can now irrigate, have food throughout the year and also income from surplus production. The Project will provide rural men, women and youths with a chance to own livestock, through the pass-on scheme which will be administered by a local NGO. The Project will also engage beneficiaries in aquaculture activities for diversification and income generation. The agro-processing activities will allow men, women and youths to participate in off-farm activities including trading and hence employment creation. The private sector will participate through the maize and cassava processing mills, agriculture service centres, agro-dealership and market linkages.

3.2.8. Transition to Green Growth: The Project has incorporated mitigation measures and watershed management in order to address the negative impact on the environment. More importantly, the Project is designed to contribute to green growth in that: (i) irrigation activities will promote growth of plants which will provide soil cover and increase crop production which could have been negatively affected by drought and famine; (ii) conservation farming and good agricultural practices will enable sustained crop production; and (iii) agro-processing activities will promote agricultural value addition, reduce post-harvest losses, increase household income, enhance food security and reduce hunger.

3.2.9. Value Addition: The Project has adopted full commodity value chain approach thus linkage from production to marketing where all stakeholders will be involved. The Project will facilitate establishment of maize/feed and also cassava milling plant based on (i) production capacity of maize and cassava crops, (ii) non-existence of agro-processing facility; and (iii) community demand. The milling plant will be managed by special purpose unit overseen by a Board which will establish market linkages with cassava and maize producers. The Project will also provide community-level processing equipment for women and youths, such as honey presses and solar dryers, and also strengthen market linkages between farmers and processors. The Project will work with National Food and Nutrition Commission and the Zambia Bureau of Standards to ensure that processed foods meet international nutritional and market standards.

3.2.10. Millennium Development Goals (MDGs): The Project will mainly contribute to the achievement of indicators of (i) MDG 1 (eradicate extreme poverty and hunger) through improved agricultural production, processing and marketing which will lead to job creation, increased household income, food security and nutrition security, and (ii) MDG 7 (ensure environmental sustainability) through implementation of the mitigation measures (environmental and social management plan) including watershed management.

3.2.11. Involuntary Resettlement: There will be no involuntary resettlements. The agricultural infrastructure will be located in areas which have already been identified by the local communities and have no land disputes.

IV – IMPLEMENTATION

4.1. Implementation Arrangements

4.1.1. The Project will be implemented by MAL, using the existing structures, over a period of 5 years. Considering the multi-disciplinary nature of the Project, it will be implemented under the MAL Director of Policy and Planning (DPP), but the day to day management of the Project will be entrusted to the existing GoZ GAFSP PTT (see para 2.6) led by the MAL Deputy Director of Policy and Planning (MAL-DDPP), prior to the recruitment of the Project Coordinator (PC). The PTT consists of MAL HQ Component Managers who are Subject Matter

Specialists (SMS), at national level, on (i) livestock, (ii) irrigation, (iii) crops, (iv) monitoring and evaluation, (v) fisheries, (vi) nutrition, (vii) gender, (viii) agribusiness, (ix) cooperatives, (x) accounting and procurement, and (xi) human resources. The PTT addresses all activities for the implementation of NAIP by GoZ and all CPs. Consequently, the PTT members do not have adequate time to dedicate to individual projects on full time basis. In order to ensure that the PTT delivers on the APMEP, timely and satisfactorily, the Project will recruit competitively, on full-time basis, a PC, a Procurement Specialist and an Accountant (local experts). The PC will coordinate the work of the PTT and report to the DPP. A multi-sectoral Project Steering Committee (PSC) will be set-up by GoZ and will comprise 7 senior Government officials indicated in Appendix 9, who will have oversight responsibility and oversee Project compliance with sector policies and strategies. The PC will be the secretary of PSC, and will be the liaison between the Project and the Bank. Prior to recruitment of the PC, the MAL-DDPP will coordinate the Project activities. The APMEP organogram is indicated in Appendix 9.

4.1.2. Procurement Arrangements: In June 2011, the Bank undertook an assessment of the National Procurement Procedures (NPP) in Zambia and identified areas of deviation from best international practices as adopted under Bank procedures. These weaknesses are being addressed by the GoZ. The Bank has been engaging in dialogue with the GoZ on the identified deviations as outlined in the Global Action Plan (GAP), reproduced in Volume II Technical Annex B.5, which affects the basic principles underlying the Bank's fiduciary obligations. The CPs have engaged the relevant GoZ bodies and pointed out provisions of the national procurement law which the country needs to amend in order to meet the required standards under international procurement practices. The Zambia Public Procurement Authority (ZPPA) is developing a Strategic Plan which will among other things focus on reforms that will address the identified weaknesses. Therefore, in the current form the NPP cannot be used for Bank financed contracts until the concerns identified in the June 2011 report are addressed to the Bank's satisfaction. Consequently, all procurement of goods, works and acquisition of consulting services financed by the Bank will be in accordance with the Bank's Rules and Procedures: "*Rules and Procedures for Procurement of Goods and Works*", dated May 2008, revised July 2012; and "*Rules and Procedures for the Use of Consultants*", dated May 2008, revised July 2012, using the relevant Bank Standard Bidding Documents, and provisions stipulated in the Financing Agreement.

4.1.3. The various items under different expenditure categories and related procurement arrangements are indicated in Table 4.1. Each contract to be financed by the GAFSP Grant, the different procurement methods or consultant selection methods, the need for prequalification, estimated costs, post and prior-review requirements, and time frame are provided in the Procurement Plan (Volume II Technical Annex B.5).

4.1.4. Civil Works: Procurement of civil works value in aggregate at UA 11.40 million will be carried out under National Competitive Bidding (NCB) covering construction of small-scale irrigation schemes (UA 10.20 million), construction of maize and cassava mills (UA 0.59 million) and construction of agriculture market centres (UA 0.61 million) and have been packaged taking into consideration the various site locations and scope with minimal lots. The use of NCB for civil works is justified due to wide geographical location and also the size is small both in scope and financial value, which are unlikely to attract bids from outside the country. All other civil works, including construction of roadside markets, rural feeder roads and mini-scale irrigation schemes valued in aggregate at UA 0.80 million will be carried out using National Shopping procedures.

Table 4.1: Procurement Arrangements (UA and USD million³)

Item Description	UA million					USD million				
	NCB	Short List ⁴	Other ⁵	N.B.F.	Total	NCB	Short List	Other	N.B.F.	Total
A. Works	11.40 (11.40)	-	1.46 (1.46)	-	12.86 (12.86)	17.27 (17.27)	-	2.22 (2.22)	-	19.49 (19.49)
B. Goods										
Vehicles	-	-	0.24 (0.24)	-	0.24 (0.24)			0.36 (0.36)	-	0.36 (0.36)
Equipment	1.16 (1.16)	-	0.15 (0.15)	-	1.31 (1.31)	1.76 (1.76)		0.23 (0.23)		1.99 (1.99)
C. Services										
Training	-	-	2.45 (2.45)	-	2.45 (2.45)	-	-	3.71 (3.71)	-	3.71 (3.71)
Consultancy	-	0.98 (0.98)	1.00 (1.00)	-	1.98 (1.98)	-	1.48 (1.48)	1.52 (1.52)	-	3.00 (3.00)
Audit	-	0.25 (0.25)	-	-	0.25 (0.25)	-	0.38 (0.38)	-	-	0.38 (0.38)
D. Operating Costs	-	-	1.45 (1.45)	2.47	3.92 (1.45)	-	-	2.19 (2.19)	3.75	5.94 (2.19)
Total	12.56 (12.56)	1.23 (1.23)	6.75 (6.75)	2.47	23.01 (20.54)	19.03 (19.03)	1.86 (1.86)	10.23 (10.23)	3.75	34.87 (31.12)

4.1.5. Goods: Contracts for procurement of honey presses (UA 223,300), the solar dryers (UA 732,100) and farm mechanisation equipment (UA 207,500) will be under the NCB due to various packages and staggered procurement. The remaining equipment will be procured under National Shopping procedures since the type of goods required are available locally and there are enough established suppliers for such items with strong representation in Zambia.

4.1.6. Consulting Services and Training: Procurement of NGO consulting services valued at UA 267,000 will be under Quality and Cost Based Selection (QCBS) method while Selection Based on Consultants Qualifications (CQS) and Selection of Individual Consultants will apply to the rest of the consultancies. The private audit firm, if directed by the Office of the Auditor General (OAG), will be recruited using Least Cost Selection (LCS) to carry out the audit services on annual basis, valued in aggregate at UA 0.25 million. Training activities valued in aggregate at UA 2.45 million for both staff and beneficiaries will be carried out on the basis of approved annual training plans.

4.1.7. Miscellaneous Activities and Operation Costs: Miscellaneous Project activities, such as nutrition campaign activities, agro-dealer support (matching grant) etc, will be procured using the internal operational system of the GoZ based on Bank prior approved work plans and budgets while operating expenses which include personnel costs, maintenance of vehicles, and office equipment, allowances and other approved general administrative expenses will utilise GoZ internal administrative/accounting procedures.

4.1.8. Financial Reporting and External Audit: The Project's financial management will be managed within MAL's existing set-up, consistent with the Bank's commitment to use country systems. There are on-going Bank and other donor-funded projects being implemented under the overall supervision of the MAL's Chief Accountant. The Financial Management (FM) capacity assessment of MAL concluded the existing capacity would satisfy the Bank's minimum requirements to manage project resources in an efficient, effective and economic manner, if all

³ Figures in parenthesis are the respective amounts financed by the GAFSP Grant.

⁴ Shortlist procedures in compliance with para 2.6 of the Bank rules. Consultant's Qualification (CQS = QBS) applies to both Firms and Individual Consultants. Audit Firm = Least Cost Selection (LCS) method.

⁵ "Other" includes Shopping, recruitment of individual consultant and use of approved Government procedures.

the agreed actions are appropriately implemented. The overall financial management residual risk for the Project is assessed as “Moderate”. The overall financial management responsibility (including accountability over funds disbursed to all implementing partners and the decentralized levels) will rest with the MAL Chief Accountant (as the head of MAL’s Finance Department) who will provide oversight responsibility to the team of Finance and Accounting Officers to ensure that proper accountability exists over APMEP transactions throughout project implementation. The Project will be required to prepare and submit to the Bank a Consolidated Interim Quarterly Progress report (IQPR), covering all project activities including those being implemented by all other implementing partners, not later than 30 days after the end of each calendar quarter. Annual financial statement prepared and audited by the OAG, including the auditor’s opinion and management letter will be submitted to the Bank not later than six (6) months after the end of each fiscal year. The audit of the Project can be subcontracted, as necessary, to private audit firm to be procured through LCS method, with the involvement of OAG, as per the Bank’s Rules and Procedures.

4.1.9. Disbursement Arrangement: Disbursements under the Project will be in accordance with Rules and Procedures as set out in the Bank’s disbursement handbook. Disbursement methods including (i) Direct Payment, (ii) Special Account (SA) and (iii) Reimbursement will be available for use by the Project. One separate Special Account in foreign currency with a Kwacha sub-account will be opened at the Bank of Zambia (BoZ) and managed by MAL. To facilitate payment of eligible project expenditures (including transfer of funds to other implementing partners and the decentralized levels), seven (7) mirror local accounts with zero balance linked to the sub-account at BoZ, will be opened at local commercial banks with wider network branches in Lusaka, Sinazongwe, Gwembe, Chongwe, Rufunsa, Serenje and Chitambo Districts, that are acceptable to the AfDB. Detailed financial management, disbursement and auditing arrangements are included in the Appraisal Report Volume II (Technical Annex B.4).

4.2. Monitoring

4.2.1. The MAL M&E system is managed by the existing MAL M&E Officer (PTT member). The MAL M&E system is being strengthened with the aim of developing an integrated sector-wide M&E system. The MAL M&E Officer will establish and manage the Project’s M&E system with assistance from short-term individual consultant (M&E Specialist) to be recruited by the Project based on predefined annual inputs as defined in Technical Annex B.3. The Project’s M&E system will be linked to the MAL’s integrated sector-wide M&E system and the Central Statistical Office (CSO). The PTT M&E Officer will document and report the progress, facilitate knowledge building, and share knowledge with key stakeholders. A monitoring plan will be developed based on the Logframe, which will have gender disaggregated indicators. While the baseline data is available and presented in the Logframe, a baseline survey will be conducted in PY1 to confirm the available data and, if need be, develop additional indicators to capture unforeseen pertinent outcomes and impacts. Indicators will be harmonized with sector indicators to ease their integration in the CSO database.

4.2.2. The Project will provide financial resources to facilitate training, data gathering, processing and reporting. The PC, through the MAL-DPP, will submit to the Bank the progress reports and annual work plans and budgets using Bank’s format. The quarterly progress reports will be submitted to the Bank within two months after the end of the reporting period. The consultant (M&E Specialist) will also assist PTT in production of annual progress reports which will be submitted to the Bank within three months after the end of each reporting period. The Bank will supervise the Project implementation through regular Supervision Missions, at least twice per year, in order to verify progress and ensure that key verifiable indicators are being monitored. The Project reports/key milestones are tabulated below.

Time-Frame	Reports/Key Milestones	Monitoring Process
Year 1	Baseline Survey Report	PTT, MAL and Consultant.
	Gender Survey Report	PTT, MAL and Consultant.
Years 1 to 5	Project Implementation Progress Reports	Beneficiaries, MAL, PTT and Consultant.
	Financial Audit Reports	Beneficiaries, MAL, PTT and OAG.
Year 3	Mid-Term Review (MTR) Report	Beneficiaries, MAL, PTT and Consultants.
	Gender Audit Report	Beneficiaries, MAL, PTT and Consultant.
	Nutrition Audit Report	Beneficiaries, MAL, PTT and Consultant.
Year 5	Beneficiary Impact Assessment Report	Beneficiaries, PTT and Consultant.
	Project Completion Report (PCR)	Beneficiaries, MAL, PTT and Consultant.

4.3. Governance

International assessments show that Zambia has significantly progressed its accountability and transparency ratings and indicators of Governance including corruption control, rule of law, regulatory quality and Government effectiveness. The 2013 Ibrahim Index of African Governance (IIAG) ranked Zambia 12th out of 52 African countries. The 2013 IIAG provided Zambia's performance across four categories of governance namely (a) Safety & Rule of Law (10th out of 52), (b) National Security (1st out of 52), (c) Gender (30th out of 52), and (d) Human Development (21st out of 52). Zambia's average score was 59.6 out of 100 which was higher than the continental average of 51.6. The 2012 World Bank Institute's Worldwide Governance Indicators rated Zambia as follows (0=low and 1=high): (a) voice and accountability = 0.44; (b) political stability and absence of violence = 0.65; (c) Government effectiveness = 0.38; (d) regulatory quality = 0.36; (e) rule of law = 0.42; and (f) control of corruption = 0.46. However, weaknesses that persist include poor budget management, weak compliance with internal control regulations, untimely implementation of audit recommendations and delays in public procurement. Proposed measures include: (i) provision of financial management manual to guide Project staff; (ii) utilisation of internal audit to identify pre-audit transaction challenges; (iii) regular submission of progress reports, and (iv) recruitment of qualified and experienced Procurement and Accounting Experts for the PTT.

4.4. Sustainability

The participatory approach adopted during Project planning will be extended throughout implementation in order to enhance ownership by beneficiaries thus ensuring sustainability. The Project's participatory approach will have clear exit strategy which will be developed after mid-term review (PY3). Management of some infrastructure will be entrusted to beneficiary organizations and private sector operators to ensure continuity of operations after the Project. The agriculture service centres will be encouraged to stock highly consumable spare parts for irrigation pumps and agro-processing equipment. The development of value chains will enhance Public Private Partnership (PPP) and also focus on market oriented processing for sustainability of investments. The Project's identified localised negative impacts on the environment will be minimized through implementation of proposed mitigation measures.

4.5 Risk Management

The potential risks identified as threat to smooth implementation of APMEP and mitigation measures are indicated in Table 4.2.

Table 4.2: Potential Risks and Mitigation Measures

No	Potential Risks	Rating	Mitigation Measures
1.	Poor performance of contractors.	Medium	The Project will (i) pre-qualify contractors based on past performance, (ii) use stringent evaluation methods. Contractors will be scrutinised through contacting the previous employers and physical verifications, (iii) determine how many on-going contracts the bidders have, and (iv) strictly follow-up contract execution.
2.	Environmental degradation and climate change.	Medium	The Project will (i) implement climate resilient investments such as conservation farming and establishment of irrigation schemes, and (ii) promote drought tolerant crops.
3.	Poor sustainability of infrastructure and irrigation and agro processing equipment	Medium	The Project will establish management entities for the irrigation schemes, agro-processing infrastructure, and agriculture service centres (ASCs). Highly consumable spares parts for irrigation pumps and agro-processing equipment will be stocked at the ASCs.

4.6 Knowledge Building

It is expected that the Project will generate a lot of knowledge that will be valuable to the design and management of similar future Bank projects. APMEP's emphasis on institutional management, community participation, private sector involvement, commodity value chain development and use of NGOs in livestock pass-on scheme will provide useful lessons for the sustainability of interventions. The management of community infrastructure by rural people, in Zambia, has not previously been analysed. Consequently, the Project will demonstrate that rural communities can ably manage infrastructure given adequate support and mentorship. APMEP will enhance the capacity of farmers and staff to remain fully involved in all planned activities. Direct beneficiaries' representatives will undergo tailor-made Project-related training and also be invited to participate in progress review meetings.

V – LEGAL INSTRUMENTS AND AUTHORITY

5.1. Legal Instruments

5.1.1 The APMEP makes use of GAFSP Grant which will be administered by the Bank.

5.2. Conditions Associated with Bank's Intervention

5.2.1 Condition Precedent to Entry into Force: The Protocol of Agreement shall enter into force on the date of signature by the Recipient and the Bank.

5.2.2 Condition Precedent to First Disbursement: The obligation of the Bank to make the first disbursement of the Grant shall be conditional upon entry into force of the Agreement and the fulfilment of the following condition, in form and substance acceptable to the Bank:

the opening of one (1) foreign currency denominated Special Account and one (1) local currency account at the Central Bank of Zambia (BoZ) for the deposit of the proceeds of the GAFSP Grant (§4.1.9).

5.2.3 Other Conditions: The Recipient shall:

- a. within six (6) months of the signing of the Protocol of Agreement, provide evidence, in form and substance satisfactory to the Bank, of the recruitment of a Project Coordinator, a Project Accountant and a Procurement Specialist, each with terms of reference, skills and qualifications acceptable to the Bank (§4.1.1); and
- b. within six (6) months of the signing of the Protocol of Agreement, provide evidence in form and substance satisfactory to the Bank of the establishment and staffing of a Project Steering Committee, with terms of reference and composition acceptable to the Bank (§4.1.1).

5.3. **Undertakings**

- (a) The Recipient shall implement, and report quarterly to the Bank on implementation of, the Environment and Social Monitoring Plan (§3.2.1).
- (b) The Recipient shall maintain the existence and functioning of the existing GAFSP Technical Team in a form and with a composition acceptable to the Bank, with its terms of reference extended to cover this Project (§4.1.1).
- (c) The Recipient shall open seven (7) mirror local bank accounts at banks acceptable to the Bank in Lusaka, Sinazongwe, Gwembe, Chongwe, Rufunsa, Serenje and Chitambo Districts (§4.1.9).

5.4 **Compliance with Bank Policies**

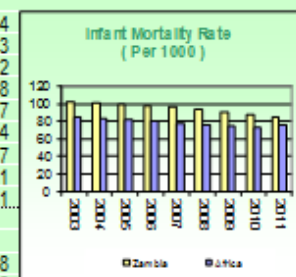
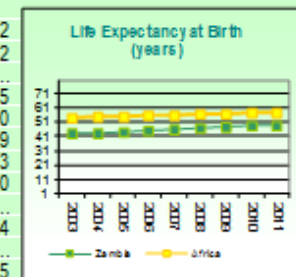
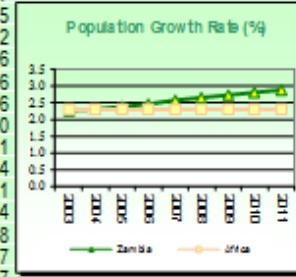
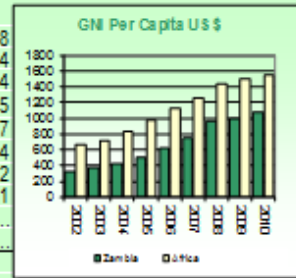
- This project complies with all applicable Bank policies.
- Non-standard conditions (if applicable): N/A

VI – RECOMMENDATION

Management recommends that the Boards of Directors approve the proposed GAFSP Grant of **USD 31.12 (UA 20.54) million** to the Republic of Zambia for the purpose of implementing the Agriculture Productivity and Market Enhancement Project (APMEP), and subject to the conditions stipulated in this report.

Appendix 1: Zambia - Comparative Socio-economic Indicators (October 2013)

	Year	Zambia	Africa	Developing Countries	Developed Countries
Basic Indicators					
Area ('000 Km ²)	2011	753	30.323	80.976	54.658
Total Population (millions)	2011	13.5	1,044.3	5,733.7	1,240.4
Urban Population (% of Total)	2011	35.9	40.4	45.5	75.4
Population Density (per Km ²)	2011	18.1	36.1	59.9	36.5
GNI per Capita (US \$)	2010	1 070	1 549	3 304	38 657
Labor Force Participation - Total (%)	2011	63.6	74.7	65.0	60.4
Labor Force Participation - Female (%)	2011	45.7	42.5	49.2	50.2
Gender -Related Development Index Value	2007	0.473	0.502	0.694	0.911
Human Develop. Index (Rank among 187 countries)	2011	164	...	...	...
Popul. Living Below \$ 1.25 a Day (% of Population)	2007-09	68.5	40.0	22.4	...
Demographic Indicators					
Population Growth Rate - Total (%)	2011	2.9	2.3	1.3	0.4
Population Growth Rate - Urban (%)	2011	3.5	3.4	2.3	0.7
Population < 15 years (%)	2011	46.5	40.4	28.7	16.5
Population ≥ 65 years (%)	2011	3.1	3.4	5.9	16.2
Dependency Ratio (%)	2011	98.4	78.1	53.0	48.6
Sex Ratio (per 100 female)	2011	100.5	99.5	103.4	94.6
Female Population 15-49 years (% of total population)	2011	22.1	24.4	26.2	23.6
Life Expectancy at Birth - Total (years)	2011	49.0	57.7	77.7	67.0
Life Expectancy at Birth - Female (years)	2011	49.4	58.9	68.9	81.1
Crude Birth Rate (per 1,000)	2011	45.9	34.5	21.1	11.4
Crude Death Rate (per 1,000)	2011	15.3	11.1	7.8	10.1
Infant Mortality Rate (per 1,000)	2011	85.3	76.0	44.7	5.4
Child Mortality Rate (per 1,000)	2011	138.3	119.5	67.8	7.8
Total Fertility Rate (per woman)	2011	6.3	4.4	2.6	1.7
Maternal Mortality Rate (per 100,000)	2010	440.0	530.7	230.0	13.7
Women Using Contraception (%)	2007	40.8	28.6	61.2	72.4
Health & Nutrition Indicators					
Physicians (per 100,000 people)	2007-09	5.5	57.8	112.0	276.2
Nurses (per 100,000 people)	2007-09	70.6	134.7	186.8	708.2
Births attended by Trained Health Personnel (%)	2009	60.2	53.7	65.3	...
Access to Safe Water (% of Population)	2010	61.0	65.7	86.3	99.5
Access to Health Services (% of Population)	2007-09	90.2	65.2	80.0	100.0
Access to Sanitation (% of Population)	2010	48.0	39.8	56.1	99.9
Percent. of Adults (aged 15-49) Living with HIV/AIDS	2009	13.5	4.3	0.9	0.3
Incidence of Tuberculosis (per 100,000)	2010	462.0	241.9	150.0	14.0
Child Immunization Against Tuberculosis (%)	2010	89.0	85.5	95.4	...
Child Immunization Against Measles (%)	2010	91.0	78.5	84.3	93.4
Underweight Children (% of children under 5 years)	2007	14.9	30.9	17.9	...
Daily Calorie Supply per Capita	2007	1 873	2 462	2 675	3 285
Public Expenditure on Health (as % of GDP)	2009	2.5	2.4	2.9	7.4
Education Indicators					
Gross Enrollment Ratio (%)					
Primary School - Total	2010	115.3	101.4	107.8	101.4
Primary School - Female	2010	116.0	97.6	105.6	101.3
Secondary School - Total	2007-09	...	47.5	64.0	100.2
Secondary School - Female	2007-09	...	44.3	62.6	99.8
Primary School Female Teaching Staff (% of Total)	2010	50.8	44.3	60.7	81.7
Adult Literacy Rate - Total (%)	2010	71.2	67.0	80.3	98.4
Adult Literacy Rate - Male (%)	2010	80.7	75.8	86.0	98.7
Adult Literacy Rate - Female (%)	2010	61.7	58.3	74.9	98.1
Percentage of GDP Spent on Education	2008	1.3	4.6	4.1	5.1
Environmental Indicators					
Land Use (Arable Land as % of Total Land Area)	2009	4.5	7.6	10.7	10.8
Annual Rate of Deforestation (%)	2007-09	2.4	0.6	0.4	-0.2
Forests (as % of Total Land Area)	2010	66.5	23.0	28.7	40.4
Per Capita CO ₂ Emissions (metric tons)	2009	0.2	1.1	2.9	12.5



Sources : AfDB Statistics Department Databases; World Bank: World Development Indicators;

last update :

June 2012

UNAIDS: UNSD: WHO: UNICEF: WRI: UNDP: Country Reports.

Note : n.a. : Not Applicable : ... : Data Not Available.

b

Appendix 2: AfDB's Active Portfolio in Zambia (October 2013)

No	Sector	Long name	Finance Source	Loan Number	Approval Date	Signature Date	Effective Date	Closing Date	Approved Amt. (UA)	Disbursed Amt. (UA)	Disb. Ratio	IP	DO	PFI STATUS	Age (Yrs)
National Operations (Public)															
1	Agriculture	Community Water Management Improvement	AWTF	5600155001751	12-Nov-09	23-Apr-10	23-Apr-10	31-Dec-13	659,218	527,769.66	80.1%	2.33	3.00	NON PP / NON PPP	3.05
2	Agriculture	Finish Supported Small-scale Irrigation Scheme (SIP)	Trust Fund	2100150001106	28-Dec-09	30-Oct-10	30-Oct-10	5/30/2014	8,137,881	3,857,355.79	47.4%	2.29	2.75	NON PP / NON PPP	2.93
3	Agriculture	Livestock Infrastructure Support Project (LISP)	ADF	2100150029293	19-Jun-13	08-Aug-03	-	31-Dec-18	12,000,000	0	0	-	-	NON PP / NON PPP	
4	Agriculture	Strengthening Climate Resilience In The Kafue Sub-Basin	Trust Fund		19-Nov-13	-	-	31-Dec-19	25,810,000	0	0	-	-	NON PP / NON PPP	
Sub-Total (Agriculture)									46,607,099	4,385,125	49.8%				
5	Water & Sanitation	Nkana Water Supply And Sanitation Project	ADF	2100150018345	27-Nov-08	22-Dec-08	12-Jun-09	31-Dec-13	35,000,000	11,130,000.00	31.8%	2.57	2.67	NON PP / NON PPP	4.01
6	Water & Sanitation	Rural Water Supply & Sanitation Program	ADF	2100150013198	31-Oct-06	17-May-07	15-Nov-07	30-Jun-13	15,000,000	4,543,500.00	30.3%	2.50	3.00	NON PP / NON PPP	6.09
Sub-Total (Water & Sanitation)									50,000,000	15,673,500	31.3%				
7	Power	Itezhi-Tezhi Power Transmission Project	ADF	2100150027396	13-Jun-12	TBD	TBD	31-Dec-18	30,000,000	0.00	0.0%	0.00	0.00	No Supervision	0.47
			NTF	2200160000989	13-Jun-12	TBD	TBD	31-Dec-18	6,400,000	0.00	0.0%	0.00	0.00	No Supervision	0.47
Sub-Total (Power/Energy)									36,400,000	-	0.0%				
Multi-National Operations															
8	Multinational	Botswana/Zambia-Kazungula Bridge Project	ADF	2100150025694	7-Dec-11	10-Feb-12	3-Sep-12	31-Dec-18	51,000,000	0.00	0.0%	2.50	2.33	NON PP / NON PPP	0.99
9	Multinational	Nacala Corridor Project Phase Ii(Zambia)	ADF	2100150022945	27-Sep-10	20-Jan-11	10-Jun-11	31-Mar-15	69,369,000	194,233.20	0.3%	2.31	3.00	NON PP / NON PPP	2.18
Sub-Total (Transport)									123,629,000	1,264,491	1.0%				
10	Social	Support To Science And Technology Education Project (SSTEP)	ADF		Nov-2013				22,220,000	0	0			NON PP / NON PPP	
Sub-Total (Social)									22,220,000						
Private Sector Operations															
11	Power	Itezhi-Tezhi Power Project	ADB	2000130008981	13-Jun-12	TBD	TBD	31-Dec-18	23,174,818	0.00	0.0%	0.00	0.00	No Supervision	0.47
12	Power	Itezhi-Tezhi Power Stand By Project	ADB	2000130009331	13-Jun-12	TBD	TBD	31-Dec-18	1,986,413	0.00	0.0%	0.00	0.00	No Supervision	0.47
13	Finance	PFSL- FAPA TA - ZAMBIA	FAPA	5700155000601	13-Jul-09	13-Jul-09	4-Sep-09	31-Dec-14	935,000	805,035.00	86.1%	0.00	0.00	NA	3.39
Sub-Total (Finance/Private Sector)									26,096,231	805,035	3.1%				
Portfolio Summary									304,952,330	22,128,152	9.0%	2.42	2.86		2.71

Appendix 3: Projects (On-going) Financed by the Bank and Other Development Partners
(October 2013)

Donor Agency	Project Title	Project Coverage	Total Budget (USD)	Implementation Organisation
ADF	Community Water Management Improvement Project for traditional Farmers	Mkushi, Kapiri Mposhi, Masaiti and Chingola	942,140	Development Aid from People to people (DAPP)
	Livestock Infrastructure Support project	Muchinga & Northern provinces	18,000,000	Ministry of Agriculture and Liv
	Strengthening Climate Resilience in the Kafue sub-basin	Southern, Central and Lusaka provinces	38,700,00	Ministry of Finance
Finland	Small-scale Irrigation Project (SIP)	Chongwe, Mazabuka, Sinazongwe	12,600,000	Ministry of Agriculture and Livestock
Norway	Conservation Agricultural Program Phase II	AEZ 1&2	28,000,000	Conservation Farming Unit (CFU)
	Expanded Food Security Pack	AEZ 2	2,571,429	Min of Community Development. Mother and Child Health
	Community Markets for Conservation - COMACO	Eastern Province	8,600,000	Wildlife Conservation Society/COMACO
European Union	Agricultural Sector Performance Enhancement Programme	Nationwide	11,659,000	Ministry of Agriculture and Livestock
FAO	Integrated Land Use Assessment II	Nationwide	3,953,096	Ministry of Land, Natural Resources & Environmental Protection Forestry Department
	UN-REDD Programme – Zambia Quick Start Initiative	Nationwide	2,180,000	Ministry of Land, Natural Resources & Environmental Protection Forestry Department
IFAD	Smallholder Livestock Investment Project (SLIP)	North-Western, Western, Southern, Eastern and Northern	14,990,000	Ministry of Agriculture and Livestock
	Smallholder Agribusiness Promotion Programme (SAPP)	20-30 districts	24,500,000	Ministry of Agriculture and Livestock
	Smallholder Productivity Promotion Programme (S3P) (co-financed by Finland)	Luapula and Northern Provinces	39,900,000	Ministry of Agriculture and Livestock
JICA	Rural Extension Service Capacity Advancement Project (RESCAP)	Northern, Western and Lusaka provinces	9,000,000	Ministry of Agriculture and Livestock
	Rural and Agriculture Development Advisor	Nationwide	1,300,000	Ministry of Agriculture and Livestock
	Food Crop Diversification Support Project Focusing on Rice (FoDiS-R)	Muchinga, N/P& WP and follow up in EP, SP, WP & Lusaka P	3,100,000	Ministry of Agriculture and Livestock
	Technical Cooperation Project for Community based Smallholder Irrigation (T-COBSI)	Main Luapula, Northern and Muchinga, Copperbelt and North Western Provinces	5,800,000	Ministry of Agriculture and Livestock
USAID	Production, Finance & Technology (PROFIT)	Eastern Province	24,000,000	ACDI/VOCA
	Food Security Research Project (FSRP), Phase III	Nationwide	12,499,501	Michigan State University (MSU), Indaba Agricultural Policy Research Institute (IAPRI)
	Expanding Impact in USAID Supported Value Chains	Eastern Province	1,998,519	Action for Enterprise (AFE)
	Horticulture Global Development Alliance	Eastern Province and Peri-urban Lusaka	4,800,000	ASNAPP, Freshmark, Freshpikt, Stellenbosch University and CETZAM
	Zambia Agriculture Research and Development Project	Eastern province	18,000,000	CGIAR: IITA, CIMMYT, ICRISAT, CIP, CIAT, World Fish Center, Harvest Plus,
	Better Life Alliance Global Development Alliance (GDA)	Eastern Province	6,626,605	COMACO, General Mills and Cargill.
World Bank	Agriculture Development Support Programme	National	37,200,000	MAL
	Irrigation development and Support project	3 Sites	115,000,000	MAL
	Livestock Development and Animal health	Selected provinces	50,000,000	MAL
WFP	Home grown school feeding programme	Western, Southern, North-Western, Northern, Luapula, Muchinga, Central & Eastern	34,672,210	MoE, MAL
	Milk for schools	Nationwide	629,412	MAL
	Disaster Risk Management	Nationwide	780,000	DMMU, FAO
	Food Security for vulnerable groups	Nationwide	15,480,006	UNHCR,
DfID	Support to Musika - Making Agricultural Markets Work for Zambia	Nationwide	7,144,000	Musika
	Access to Finance (includes rural finance)	Nationwide	21,432,000	Bank of Zambia and FIs

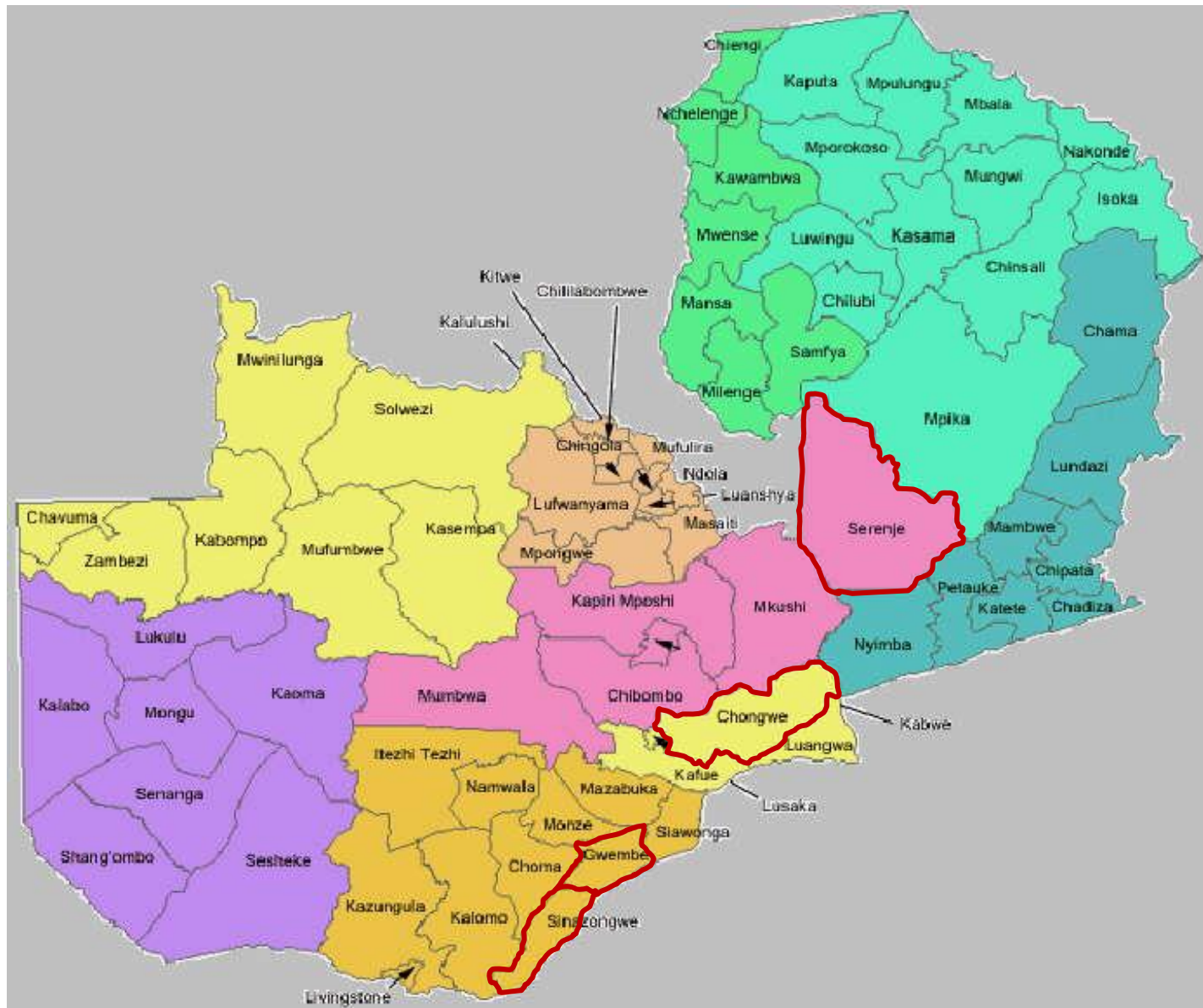
Appendix 4: List of Potential Irrigation Sites/Schemes**Category 1: Small-scale Irrigation Schemes (Total: 2,032 ha)**

No	Scheme	District	Scheme Area (ha)	Number of Farmers	Water Source	Estimated Development Cost (USD)	Estimated Cost per ha (USD)	Estimated Cost per HH (USD)	Readiness
1	Simupande	Sinazongwe	165	364	Lake Kariba	1,125,000	6,818	3,091	Design ready
2	Siatwinda	Sinazongwe	97	280	Lake Kariba	597,000	6,155	2,132	No design
3	Malima	Sinazongwe	215	430	Lake Kariba	1,680,000	7,814	3,907	Re-Design
4	Chabbobboma	Gwembe	210	430	Lake Kariba	1,130,000	5,381	2,628	No design
5	Saasa	Serenje	94	166	Saasa Dam	390,000	4,149	2,349	No design
6	Msangashi	Serenje	56	115	Msangashi Dam	370,000	6,607	3,217	No design
7	Mulembo	Serenje	65	120	Mulembo river	250,000	3,846	2,083	No design
8	Mazembe	Serenje	50	120	Mumbi stream	250,000	5,000	2,083	No design
9	Lusiwasi	Chitambo	720	1,310	Lake Lusiwasi	4,300,000	5,972	3,282	No design
10	Rufunsa	Rufunsa	360	780	Rufunsa dam	2,300,000	6,389	2,949	No design
Total			2,032	4,115		12,392,000	6,098	3,011	

Category 2: Community-level Mini-scale Irrigation Schemes (Total: 895 ha)

The target sites will be developed on demand-driven basis, through the use of NGO. Consequently, the list of target sites will be produced in PY1 and PY2.

Appendix 5: Map of Zambia – Showing Participating Districts (Sinazongwe, Gwembe, Chongwe⁶, Rufunsa, Serenje and Chitambo)



⁶ Chongwe and Rufunsa used to be one District. Serenje and Chitambo used to be one District. Revised map showing new Districts is not available (re-demarcated in 2013).

Appendix 6: Issues Raised by the GAFSP Secretariat (August 2013)

No	Issue	Action Taken
1.	Zambia proposal did not fully demonstrate effective implementation capacity and/or technical feasibility since most background information/data was not annexed to the proposal.	Noted. In order to boost implementation capacity, the Project will have a dedicated unit comprising full time Project Coordinator, Procurement Specialist and Accountant who will be supported by Subject Matter Specialists at Provincial and District levels. The detailed background information/data have been included in the Project Preparation Report Volume II (Technical Annexes).
2.	Cost of the irrigation schemes is high, at over \$7,000 per hectare. In particular, two schemes (Buleya Malima A and Buleya Malima B) cost \$8,286 per hectare and \$13,575/ha respectively.	Buleya Malima B (USD 13,575 per ha) has been dropped from the Project design since alternative scheme network designs are equally expensive. The other schemes have been reviewed and the costs revised downwards. The average cost is now US\$ 6,098 per ha and ranges from US\$ 3,846 to 7,814
3.	Some project objectives were deemed to be unrealistic, particularly the goal of reducing malnutrition from 45% to 30% in the project areas within five years.	Noted. However, this is the NAIP objective. For the Project, it has been recast as follows “contribute to reduction of chronic malnutrition from 45% to 40% among under-five children in participating Districts”.
4.	The selection criteria, financial sustainability of the business model and potential competitive impact of the 180 agro-dealer matching grants were not fully fleshed out.	Noted. The number has been reduced from 180 to 60 agro-dealers.
5.	It will be critical to demonstrate how the Project and the relevant policy environment will be implemented in a way that significantly reduces rural poverty.	Noted. This has been amplified in the Project Preparation Report.
6.	The key part of GAFSP is to facilitate country-led investment plans that are inclusive of the participation of all the relevant stakeholders, such as producer groups, other civil society organizations, and the private sector.	Done. This has been included in the Project design.
7.	Since the proposal amount was reduced by 25%. The GAFSP Secretariat suggests to the Government to scale down the number of districts concentrating on clusters of adjacent districts or reconsider highest cost irrigation schemes.	Done. Number of Districts have been reduced from 10 to 6, clustered in 2 Districts based on the vulnerability assessment, high poverty level, food insecurity, malnutrition, HIV/AIDS prevalence rates, vulnerability to climate change and disaster risks. The most expensive scheme (USD13,575/ha) has been dropped since the alternative solutions are equally expensive.

Appendix 7: Financial and Economic Analysis

1. The economic and financial analysis was based on the incremental net benefit arising from the Project investment. The main assumption underlying the economic and financial analysis is an anticipated increase in the productivity of the main crops, milk production and fish captures as a result of the modernization of the farming systems, including irrigation, the development of value added related infrastructure and the improvement of the agricultural service delivery pattern. For the proposed activities, crop diversification and intensification will be enhanced under rainfed agriculture and irrigation using improved seeds and fertilizers. It is estimated that 25,000 ha will be under rainfed cultivation covering maize, cassava, soya beans, sorghum, groundnuts, sunflower, cowpeas and orange sweet potatoes. The farming system is mixed cropping with one cycle per year. Maize is the most common crop covering 70% of the cultivated area and 30% for other crops. It is assumed that 80% of the farmers would adopt the proposed new cropping pattern by the end of the Project. The irrigation schemes will cover 2,927 ha under crop rotation on a year round basis for green maize, rice, Irish potatoes, tomato and orange sweet potatoes. The Project will develop 340 fish cages and 280 fish pens. The average selling size is 250 grammes per fish. The production costs are essentially feed (80%), fingerlings and labour, assuming 2 cycles per year. The Project will promote improvement of health and productivity of local/village chicken which is constrained by outbreak of Newcastle disease. About 3,200 poultry-keeping households will have access to the Newcastle vaccine which will increase off-take by 20 chickens per year per household.

2. Other Assumptions: (i) the maize was treated in the analysis, as a traded good since it offers an important export potential; and (ii) post-harvest losses = 30%.

FINANCIAL ANALYSIS						
ITEMS	1	2	3	4	5	6 to 25
Revenu (ZMK)						
Agriculture	-	-	37 783 165	43 939 078	50 094 990	50 094 990
Fisheries			3 962 700	7 925 400	13 209 000	13 209 000
Poultry			1 225 000	1 837 500	2 205 000	2 450 000
Livestock			493 290	616 613	698 828	822 150
Total inflow	-	-	43 464 155	54 318 590	66 207 818	66 576 140
Costs						
Investments	190 939 511	-	-	-	-	-
O&M	1 500 000	5 800 000	7 400 000	8 750 000	14 750 000	14 750 000
Total outflows	192 439 511	5 800 000	7 400 000	8 750 000	14 837 379	14 750 000
Net Flows	- 192 439 511	- 5 800 000	37 618 015	46 386 628	51 738 761	51 826 140
FIRR	20%					
NPV	ZMK 15,510,650					

ECONOMIC ANALYSIS						
ITEMS	1	2	3	4	5	6 to 25
Revenu (ZMK)						
Agriculture	-	-	53 443 525	59 956 063	66 468 600	66 468 600
Fisheries			3 962 700	7 925 400	13 209 000	13 209 000
Poultry			1 225 000	1 837 500	2 205 000	2 205 000
Livestock			616 613	770 766	873 534	873 534
Total inflow	-	-	59 247 838	70 489 728	82 756 134	82 756 134
Costs						
Investments	190 939 511	-	-	-	-	-
O&M	1 500 000	5 800 000	7 400 000	8 750 000	14 750 000	14 750 000
Total outflows	192 439 511	5 800 000	918 750	8 750 000	14 750 000	14 750 000
Net Flows	- 192 439 511	- 5 800 000	58 329 088	61 739 728	68 006 134	68 006 134
FIRR	26%					
NPV	ZMK 17,493,928					

4. Sensitivity analysis: The sensitivity analysis, in the table below, shows that both EIRR and FIRR are sensitive to change in prices and to some extent, cost variation.

Item	EIRR (26.0%)	FIRR (20.0%)
10% price increase	28%	21%
10% price decrease	24%	17%
10% cost increase	25%	18%
10% cost decrease	27%	22%

Appendix 8: Environmental Issues

1. Based on the Bank's environmental and social assessment, the GAFSP APMEP has been classified as Category 2, which means that, potential environmental impacts from the planned activities will be localized, minimal, short term, manageable, reversible and can be mitigated. There will be no resettlement issues. The project seeks to reduce poverty by ensuring food, income and nutritional security among the smallholder farm households by increasing agricultural production and productivity, and subsequently increasing market engagements. Activities which have environmental and social bearing are in **Component 1: Agricultural Production and Productivity** (construction/expansion of irrigation schemes, aquaculture development, crop diversification and intensification using mechanization, conservation farming and livestock development), and **Component 2: Value Chain Development and Market Linkages** (agro-processing infrastructure development, agro-dealers support, establishing agro-market centres, rehabilitation of feeder roads and improvement of roadside markets). The negative environmental impacts include disturbance of soil from digging of pits and foundations, tree cutting, vegetation clearing, emission of dust and generation of noise which will be experienced during the construction phase and will be localized, minimal, short term and can be mitigated. During the operation phase, the negative impacts will include solid, liquid, chemical and biological wastes, which will be generated from the normal operations of the facilities and can be managed by incorporating the requisite waste and effluent handling units.

2. The negative impacts will be localized which can be minimized by using proper mitigation measures. The Strategic Environmental and Social Assessment (SESA) report is being developed, which will provide a holistic approach for the identification, assessment, and mitigation of potential negative impacts. The SESA will be reviewed and cleared by the Bank as well as the Zambia Environmental Management Agency. The APMEP triggered the Bank environmental and social policies, tabulated below. Future sub-projects will be screened to ensure compliance with the triggered environmental and social policies. Sub-projects that will trigger new policies will be considered accordingly.

No.	AfDB Key Environmental Issues Triggered	Yes	No
1.	Reversing Land Degradation and Desertification	[X]	[..]
2.	Protecting the Coastal Zone	[..]	[X]
3.	Protecting Global Public Goods	[X]	[..]
4.	Improving Public Health	[X]	[..]
5.	Enhancing Disaster Management Capabilities	[X]	[..]
6.	Promoting Sustainable Industry, Mining and Energy Resources	[X]	[..]
7.	Improving Urban Environmental Management	[..]	[X]
8.	Environmental Governance	[X]	[..]
9.	Institution and Capacity Building	[X]	[..]
10.	Increasing Awareness	[X]	[..]
11.	Stakeholder Participation	[X]	[..]

3. Climate Change: Zambia has recently experienced a wide range of climate risks like flooding, short rains and dry spells. The said risks are significant since they affect agricultural production, water quantity and quality, human health and energy. Above that, the livelihoods of the rural population are negatively affected since agriculture is their major source of income and food. APMEP will facilitate climate change adaptation in order to improve resilience to climate variability through measures that will improve agricultural production, household income, food and nutrition security. This will be done through support to: (i) sustainable management of rangeland and pasture; and (ii) watershed management.

Appendix 9: Proposed APMEP Organogram and PSC Membership



SCCI ... *Seed Control and Certification Institute*
 ZARI ... *Zambia Agriculture Research Institute*
 M&E ... *Monitoring and Evaluation*

Project Steering Committee (PSC) Membership

No	Member
1.	Secretary to Treasury (Ministry of Finance) - Chairperson
2.	Permanent Secretary - Ministry of Agriculture and Livestock
3.	Permanent Secretary - Southern Province
4.	Permanent Secretary - Lusaka Province
5.	Permanent Secretary - Central Province
6.	Permanent Secretary - Ministry of Works
7.	Representative of Zambia Environmental Management Authority (ZEMA)
8.	<i>MAL Director of Policy and Planning - Secretariat</i>
9.	<i>Project Coordinator - Secretariat</i>