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LIBERIA AGRICULTURE SECTOR INVESTMENT PROGRAM (LASIP) REPORT

Prepared in Partial Fulfillment of the Requirements for the
Comprehensive African Agriculture Development Programme
(CAADP) Compact

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Table of Contents

ACRONYMS	V
EXECUTIVE SUMMARY	VII
I. BACKGROUND	1
1.1 Political, Economic, and Social Conditions	3
1.1.1 Historical Overview	3
1.1.2 The Economy	3
1.1.3 Social Conditions	4
1.2 Agriculture Sector Issues	5
1.2.1 Strategies and Policies	5
1.2.2 Structure and Performance of the Agriculture Sector	6
1.2.3 Private and Public Sector Involvement	13
1.2.4 Challenges and Opportunities	14
1.3 LASIP Development and Consultation Process	19
1.3.1 Engagements and Partnership Development	20
1.3.2 Evidence-Based Planning and Building Alliance for Investment	20
1.3.3 Program Design and Review	20
II. LASIP PRIORITY PROGRAMS AND SUB-PROGRAMS	21
2.1 Program 1: Food and Nutrition Security	21
2.1.1 Sub-Program 1: Food Crops Production and Productivity Enhancement	21
2.1.2 Sub-Program 2: Improved Nutritional Status and Management of Food Emergencies	21
2.1.3 Sub-Program 3: Smallholder Tree Crops and Agro-forestry Development	22
2.1.4 Sub-Program 4: Fisheries Development	22
2.1.5 Sub-Program 5: Livestock Development and Promotion	23
2.1.6 Sub-Program 6: Special Women and Youth Initiative	23
2.2 Program 2: Competitive Value Chains and Market Linkages	23
2.2.1 Sub-Program 1: Rehabilitation and Expansion of Rural Roads	24
2.2.2 Sub-Program 2: Rural Agricultural Infrastructure and Technology	24
2.2.3 Sub-Program 3: Market and Enterprise Development	24
2.2.4 Sub-Program 4: Rural Financial Services	25
2.3 Program 3: Institutional Development	25
2.3.1 Sub-Program 1: Rebuilding the Ministry of Agriculture and Improved Coordination and Management	26
2.3.2 Sub-Program 2: Reviewing and Upgrading Selected Agricultural Parastatals	26
2.3.3 Sub-Program 3: Building Extension and Enhancing Technologies	26
2.3.4 Sub-Program 4: Capacity Building of Farm-based Organizations	27
2.3.5 Sub-Program 5: Revitalizing Agricultural Research	27
2.3.6 Sub-Program 6: Renewing Agricultural Education and Training	27
2.4 Program 4: Land and Water Development	28
2.4.1 Sub-Program 1: Land Reform and Capacity Building	28
2.4.3 Sub-Program 2: Enhanced Land Husbandry	28
2.4.2 Sub-Program 3: Expansion of Irrigable Land	28
2.4.4 Sub-Program 4: Improved Wet and Degraded Land Management	28
2.5 Cross-Cutting Issues	29
2.5.1 Gender and Youth	29
2.5.2 Environmental Protection	30
III. FINANCING THE LASIP	33
3.1 Public Financing of Agriculture	33

3.2 Implementation Costs	35
3.2.1 Overview	35
3.2.2 Sources and Uses of Funds	38
3.2.3 Recurrent and Capital Expenditures	38
3.3 Funding Sources	41
3.3.1 National Budget	41
3.3.2 Donors	41
3.3.3 Private Sector	41
3.4 Gap Analysis	41
IV. IMPLEMENTING THE LASIP	43
4.1 Implementation Arrangements for the LASIP	43
4.1.1 Program Management	43
4.1.2 Stakeholder Engagement, Cross-sectoral Collaboration and Partnerships	44
4.2 Programs	47
4.3 Sub-Programs	47
4.4 Investing in Policy Review and Improvement	48
4.5 Risks and Mitigation Measures	49
V. ORGANIZATION AND IMPLEMENTATION OF THE LASIP M&E SYSTEM	51
5.1 Implementation of LASIP M&E Framework	51
5.2 What to Monitor and Evaluate under LASIP	51
5.3 Data Collection	52
5.4 Data Analysis	52
5.5 Proposed M&E Annual Report Format	53
5.5.1 Introduction	53
5.5.2 Enabling Environment	53
5.5.3 Implementation Process	53
5.5.4 Tracking Commitments and Agricultural Spending	53
5.5.5 Agricultural Growth Performance	53
5.5.6 Agricultural Trade Performance	53
5.5.7 Poverty, hunger and food and nutrition security (CAADP/MDG goals)	54
5.6 Specific Roles and Responsibilities of Various Actors of the M&E Process	54
5.6.1 Roles and Responsibilities of the M&E Directorate	54
5.6.2. Roles and Responsibilities of Directorates/Departments of MOA	55
5.6.3. Roles and Responsibilities of County Agricultural Offices in M&E	55
5.6.4. Roles and Responsibilities of District Agricultural Offices in M&E	56
5.6.5. Roles and Responsibilities of NGOs involved in Agricultural Development at District and County levels in M&E	56
5.7 Indicators for LASIP	56
5.8 Sources of Data	67
5.9 Cost of LASIP M&E	67
REFERENCES	69
ANNEX	73

TEXT TABLES

Table (Executive Summary): Summary of the LASIP for 2011–2015 (5-Year Program)

Table 1: Private Sector Concessions in Agriculture and Forestry

Table 2: MOA Budget Execution

Table 3: Summary of the LASIP for 2011–2015 (5-Year Program)

Table 4: Financial Sources for the LASIP

Table 5: LASIP Recurrent and Investment Costs by Program

Table 6: LASIP Risks and Mitigation Actions

Table 7: LASIP Cross-Sectoral Monitoring and Evaluation Indicators

Table 8: LASIP Results Framework

ANNEX TABLES

Annex Table 1: Liberia Selected Economic and Financial Indicators (2004–2008)

Annex Table 2: Liberia Sectoral Origin of Gross Domestic Production

Annex Table 3: Employment by Industry (2006–2008)

Annex Table 4: Commodity Composition of Exports (2006–November 2008)

Annex Table 5: Commodity Composition of Imports (2006–November 2008)

Annex Table 6: Import of Meat Products, FY 2005/2006

Annex Table 7: Agricultural Land Capability

Annex Table 8: LASIP M&E Cost Estimates

Acronyms

ACC	Agricultural Coordination Committee
ADWG	Agricultural Donors Working Group
AfDB	African Development Bank
ASRP	Agriculture Sector Rehabilitation Project
CAADP	Comprehensive African Agricultural Development Programme
CAAS-Lib	Comprehensive Assessment of the Agricultural Sector of Liberia
CAC	County Agricultural Coordinator
CARI	Central Agricultural Research Institute
CBA	Cost Benefit Analysis
CBL	Central Bank of Liberia
CDA	Cooperative Development Authority
CDC	County Development Steering Committee
CPO	Crude Palm Oil
ECOWAS	Economic Community of West African States
EIRR	Economic Internal Rate of Return
FAO	Food and Agriculture Organization (United Nations)
FAPS	Food Agriculture Policy and Strategy
FBO	Farmer-Based Organization
FIMCAB	Financial Management and Capacity Building Program
FY	Fiscal Year
GDP	Gross Domestic Product
GOL	Government of Liberia
Ha	Hectare
HIPC	Heavily Indebted Poor Countries Initiative
IFAD	International Fund for Agricultural Development
IFI	International Financial Institution
IMF	International Monetary Fund
LASIP	Liberia Agriculture Sector Investment Program
LCCC	Liberia Cocoa and Coffee Corporation
LISGIS	Liberia Institute of Statistics and Geo-Information Services
LMA	Liberia Market Association
LPMC	Liberia Produce Marketing Corporation
LRDA	Liberia Rubber Development Authority
M&E	Monitoring and Evaluation
MASL	Miles Above Sea Level
MCI	Ministry of Commerce and Industry
MDG	Millennium Development Goal
MIA	Ministry of Internal Affairs
MOA	Ministry of Agriculture
MOF	Ministry of Finance
MOGD	Ministry of Gender and Development
MOHSW	Ministry of Health and Social Welfare
MOPEA	Ministry of Planning and Economic Affairs
MOPW	Ministry of Public Works
MT	Metric Ton
MSY	Maximum Sustainable Yield
NAPA	National Adaptation Program of Action
NCDS	National Capacity Development Strategy
NFSNS	National Food Security and Nutrition Strategy
NGO	Nongovernmental Organization
NIC	National Investment Commission

NMTIP	National Medium-Term Implementation Program
NPC	National Palm Corporation
PFM	Public Finance Management
PMU	Project Management Unit
PPP	Public-Private Partnership
PRS	Poverty Reduction Strategy
SIDA	Swedish International Development Cooperation Agency
SME	Small and Medium Enterprise
SWOT	Strength-Weakness-Opportunity-Threat
TASMOA	Technical Assistance Support for Ministry of Agriculture (USAID)
UN	United Nations
UNDP	United Nations Development Programme
UNICEF	United Nations Children's Fund
WFP	World Food Program

Executive Summary

Background

African governments, in recognition of the relationship between agriculture and economic growth and development of their respective countries, adopted the Comprehensive African Agricultural Development Programme (CAADP) in 2003 in Maputo, Mozambique. CAADP is an integrated, continent-wide framework that seeks to restore agricultural growth, facilitate rural development, and ensure food and nutrition security in Africa. It is based on four main pillars: (i) extending the area under sustainable land management and reliable water control systems; (ii) improving rural infrastructures and trade-related capacities for market access; (iii) increasing food supply and reducing hunger; and (iv) strengthening agricultural research, technology dissemination, and adoption.

Within the context of fostering agricultural-led economic growth, emphasizing the role of the private sector, CAADP targets agriculture sector growth of 6% per annum and obliges African governments to commit at least 10% of their annual national budgets to agriculture in pursuit of this target. The protocols of the framework call on each African government to develop an agriculture sector investment program that, once approved by the governing authorities, is used as the basis of a “compact” between the government, African partners, and the international donor community. The Government of Liberia (GOL) adheres to the vision and principles of CAADP and is a signatory to the framework. This document, the Liberia Agriculture Sector Investment Program (LASIP), was developed in partial fulfillment of the requirements of the framework. It presents the strategic choices Liberia has made for agricultural growth and development over the next ten years in an environmentally friendly and sustainable manner. This Executive Summary presents the key features and priorities of the program.

Economic and Social Conditions

Liberia is a nation-state transitioning from “emergency to development.” Under the leadership of President Ellen Johnson Sirleaf, Africa’s first female elected head of state, the country has embarked on the Herculean task of reconstructing a war-damaged society. The GOL developed a Poverty Reduction Strategy (PRS) that directed efforts toward addressing the interlinking problems of poor governance, illiteracy, unemployment, poverty, and social conflict. The PRS has four pillars: Expanding Peace and Security; Revitalizing Economic Activities; Strengthening Governance and the Rule of Law; and Rebuilding Infrastructure and Providing Basic Services.

Liberia’s population currently stands at 3.5 million. Despite abundant natural resources, bad governance has perennially engendered poverty, conflicts, and low human development. In 2009, Liberia had a human development index of 0.442, ranked 169 out of 182 countries in the world.^{1/} Access to modern health services is estimated at 41%^{2/}, and illiteracy, illustrated by an adult rate of only 57.9% (62% of women and 29% of men)^{3/}, are among the pressing social issues that need to be addressed.

Economic recovery has gradually grown since the inception of the new government in 2006. Liberia has experienced real growth rates of 7.8% (2006), 9.5% (2007), and 4.5% (2009).

^{1/} United Nations Development Program. 2010. 2009 UNDP Human Development Report.

^{2/} Ministry of Health and Social Welfare. 2008. 2007 National Health Policy and Plan.

^{3/} World Bank. 2007. Towards Women’s Economic Empowerment: A Gender Needs Assessment. World Bank, August 2007, pp. 22.

Decline in 2009 can be attributed to the impact of the global financial crisis. Liberia remains one of the world's poorest countries with a per capita gross domestic product (GDP) of only US\$362 in 2009.^{4/} Unemployment was widespread; in 2008 only 295,354 persons in a labor force estimated to be 1 million had jobs, and agriculture and forestry accounted for 60% of that quantum. Poverty remains a challenge. It is estimated that at least two-thirds of Liberians live in poverty—on less than one United States dollar per day.

Liberia recognizes agriculture as a strategic sector because approximately 70% of the population depends on it for livelihood. It is a significant net contributor to the economy in terms of employment and foreign exchange earnings, and a primary determinant of nutrition, education, poverty reduction, and rural transformation. Unlike education and other investments that have a long gestation period, the effects of agricultural investment on economic growth and development are fast.

The GOL and the Ministry of Agriculture (MOA) recognize the importance of private sector growth especially when addressing the needs of small farmers. Within this framework, the PRS, Liberia's post-conflict renewal agenda, seeks "to revitalize the food and agricultural sector to contribute to shared, inclusive, and sustainable economic growth and development, provide food and nutritional security, increase employment and incomes, and measurably reduce poverty."^{5/} Thus, Liberia's national policy objectives are aligned with both CAADP's Goal and the Millennium Development Goal (MDG) of reducing hunger and poverty.

Structure and Performance of the Agriculture Sector

Protracted conflicts destroyed agricultural capital and disrupted food production, bringing to the fore entrenched structural impediments and past policy failures. Approximately half of the population is either food insecure or highly vulnerable to food insecurity. Liberian agriculture comprises food and tree crops, fisheries, and livestock, and the sector accounted for 42.2% of real GDP in 2008. Rice and cassava remain the main staple food crops while rubber, oil palm, and cocoa are the dominant export tree crops. Rubber currently accounts for almost 90% of total export earnings because timber, which was responsible for between 50% and 60% of total exports before 2000, was until recently under United Nations sanctions. Women are major players in the sector; they produce over 60% of agricultural products and constitute the majority of smallholder producers (those with 15 or fewer acres of land) and the agricultural labor force.

Agriculture characterized by low productivity is caused by many factors including structural constraints, inadequate policies, and prolonged conflicts that displace farming communities, degrade transport and processing infrastructures, and diminish productive capacities (assets and skilled personnel).

Major challenges include weak land management and water control systems; impaired market access due to limited network of roads; limited scope for crop diversification and rudimentary production techniques; poor food value chains including storage, processing, and marketing channels; lack of agriculture credit; and low institutional capacity. As a result, incentives to produce marketable surpluses are limited.

Development Strategies and Investment

Actualizing the alignment of national, continental, and global objectives through the implementation of LASIP will require not only increased budgetary support and improvement in the absorptive capacity of core agricultural institutions, but also reform of the policy environment for agriculture. These will include the formulation and implementation of a rice or food policy that balances the interests of consumers and producers, liberalization of tree crop marketing particularly for cocoa and coffee, and provision of fiscal incentives, such as the removal of tariffs on agricultural inputs, to facilitate private sector investment and the

^{4/} United Nations Development Program. 2010. 2009 UNDP Human Development Report.

^{5/} Republic of Liberia. 2006. Liberia Interim Poverty Reduction Strategy.

commercialization of agriculture. Restructuring key institutions such as the MOA and the Central Agricultural Research Institute, and state-owned corporations such as the Liberia Produce Marketing Corporation will also have to be undertaken to focus limited public resources on policy development, coordination, regulation, and provision of essential services, and to ensure maximum participation of rural communities and households in decisions that affect their lives.

LASIP Programs

The LASIP identifies priority areas from which investment projects aligning national objectives and the CAADP will be developed. The program will be a public-private partnership (PPP) in which investment growth for the export sectors will be spearheaded by the private sector, while the public sector will concentrate on the promotion of small farmer growth and development.

Private Sector-oriented Investment Sub-programs. The Food Agriculture Policy and Strategy recognizes the priority of the private sector in the productive sector while the government regulates and promotes growth through the provision of access to smallholders and women. The private sector includes large commercial investors, small and medium enterprises (SMEs) both in agriculture production and services, and smallholders.

For commercial investors with portfolios of US\$10 million or less, Liberia has a “one-stop-shop” process in which taxation and land constraints are handled by the National Investment Commission (NIC). This institution manages constraints of investors and provides a forum in which all GOL institutions can participate. Investments over US\$10 million are subject to inter-ministerial committee arrangements that also involve the NIC.

The GOL has concluded several concession agreements with various commercial investors for development of targeted sub-sectors within the agriculture and forestry sectors. In the agriculture sector, investor focus is now changing from rubber to other sub-sectors such as rice, palm oil, cocoa, coffee, and bananas. Presently, private commercial sector investment represents over 800,000 ha and 40,000 to 60,000 formal jobs, or 6% of the job market. The private commercial sector will provide income for the GOL consistent with growth targets defined in the LASIP.

Formulating the LASIP

Through a series of technical meetings resulting in several validation workshops, LASIP programs and sub-programs have been reordered to reflect priorities consistent with reduction of hunger and poverty in Pillar 2 of the “Lift Liberia” PRS.

Program 1: Food and Nutrition

Food availability, accessibility, and utilization are major challenges on account of low production and productivity, bad road conditions, high post-harvest losses, low income levels, and poor systems of coordination and information management. Liberians are therefore net buyers of food, making reducing the real cost of food a major food security objective. The tree crops sub-sector is marred by ownership and governance issues, old tree stocks and varieties, unimproved germplasm, and low-value addition.

Fisheries, including artisanal fisheries, are hampered by weak institutional capacities for planning, advice and monitoring, and surveillance; lack of infrastructure (such as harbors); and limited facilities for storage, processing, and handling.

Women are often marginalized. Despite recent advances on the legislative and policy fronts, as well as dominance in agriculture, there are still gender disparities in access to land, ownership of assets, access to credits, extension services, skills, and business management training.

This component is a high priority of the GOL, since a shift to low land production targets entails more women producers. It aims to achieve the goal of the National Food Security and

Nutrition Strategy that was developed to ensure that all Liberians have reliable access to the food they need and are able to utilize that food to live active and healthy lives. This will be accomplished by increasing food production, making it accessible to all including vulnerable segments of the population, and improving its utilization and systems for coordination and information management. It includes the improvement in the nutritional status of children under five and pregnant and lactating women. Efforts will also be made to rehabilitate, expand, and diversify smallholder tree crops, and agro-forestry will be given special attention. Attention will need to be paid to import trade policy to help Liberian producers to compete with imports.

Good governance and sustainable management of fisheries and livestock development will be promoted. Investments will also be made to improve women's access to land, credit, inputs, and extension services and enhance their participation in value chains.

All of these priority interventions will be undertaken within six interrelated components as follows: *Food Crops Production and Productivity Enhancement; Improved Nutritional Status and Management of Food Emergency; Smallholder Tree Crops and Agro-forestry Development; Sustainable Fisheries Sub-sector Development; Livestock Development and Promotion; and Special Women and Youth Initiative*. The cost of these interventions is projected to be US\$422 million and the gap is estimated at US\$308 million for 2011–2015.

Program 1 will allow Liberians to sustainably address food insecurity, graduate from emergency food aid to food assistance, and make progress toward meeting MDG goals, particularly poverty and hunger reduction.

Program 2: Competitive Value Chains and Market Linkages

Value chains are undeveloped and markets are inaccessible in Liberia. Rural infrastructure, including roads, is limited and deplorable. Storage, drying, and processing facilities are rare, and food safety and quality control system remain a challenge. Linkages between producers and markets are poor, and farmers lack appropriate information to enable them make prudent marketing decisions. There is a severe limitation of agricultural credit; in 2008, agriculture accounted for only 5% of all commercial bank credit. Financial services are particularly limited in rural communities. Agriculture continues to be undertaken by simple hand tools, and Liberian farmers lack skills and knowledge needed to operate and maintain labor-saving technologies. There is very low national and sector capacity for the efficient utilization of new technology and management of agricultural innovations and machinery.

Liberia will urgently rehabilitate and expand its transportation and agricultural infrastructure to enhance access to markets. Under this component, farm-to-market roads will be rehabilitated and expanded as storage and processing facilities and infrastructures for crops, livestock and fisheries are improved.

Capacity of smallholders and other value chain participants will be built through development of agribusiness skills and knowledge, dissemination of information, and the use of technology innovations and rural finance/credit. The capacity of the MOA and relevant ministries and agencies to enforce international commitments will also be developed, greater use of indigenous agricultural products and foods produced by local producers promoted, and harmonization of agricultural and commercial policies within the Mano River Union and Economic Community of West African States pursued.

These interventions, at an indicative cost of US\$304 million, will be undertaken under four sub-program components as follows: *Rehabilitation and Expansion of Rural Roads; Rural Agricultural Infrastructure and Labor-Saving Technologies; Market and Enterprise Development; and Rural Financial Services*. The gap is estimated at US\$252 million.

Program 2 will allow Liberian farmers and SMEs to be linked to input and output markets by roads and access to rural finance. These activities will lead a step-by-step approach to “farming as a business.”

Program 3: Institutional Development

The Liberian civil war decimated the MOA's capacity to effectively execute its mandate of sector policy formulation, planning, and coordination. There are limited trained staff and resources. The MOA carried out an assessment in 2008, and proposals for change were submitted to the Governance Commission in 2009.^{6/}

The Central Agricultural Research Institute was virtually destroyed by the war, but the Institute is now painfully reinventing its programs and rehabilitating its infrastructure. This provides an opportunity to adapt to the major paradigm shifts seen in developing countries, including emphases on innovation systems, value chains, and development of adaptive research in cooperation with regional institutions.

Small farmers are illiterate and live largely in isolated villages with little or no facilities to receive updated information on agriculture and rural development. Agricultural extension services (nongovernmental organizations [NGOs], private extension, etc.) will be decentralized and demand-driven. Persistent operational under-funding and conflict have limited the scope and impact of the diverse extension service.

Agricultural parastatal organizations currently lack capacity to execute their mandates. These parastatals, including the Liberian Produce Marketing Corporation, the Liberia Rubber Development Authority, the Cooperative Development Authority, and the Agricultural Cooperative Development Bank, are being assessed, and selected parastatals will be rehabilitated along the PPP strategy. Thus, some could be privatized and others strengthened to perform oversight or regulatory role.

The MOA will continue to work with the Governance Commission to review and clarify its mandates, roles, responsibilities, and relationships relative to the increased roles of the private sector.

All of these interventions will be undertaken, at an estimated cost of US\$118 million (due to the lack of feasibility studies), under six components as follows: *Rebuilding the Ministry of Agriculture and Improved Coordination and Management; Reviewing and Upgrading Selected Parastatals; Rebuilding Extension and Enhancing Technologies; Capacity Building of Farm-based Organizations; Revitalizing Agricultural Research; and Agricultural Education and Training*. The gap for institutional development of an estimated US\$111 million is still too wide given the critical importance of improved capacity to LASIP implementation.

Program 3 will allow Liberian farmers to be served by efficient and diverse extension services provided by the MOA, NGOs, the private sector, and others with a focus on transfer of improved production, value addition, and marketing technologies.

Program 4: Land and Water Management

The objective of this program is to ensure that the country's endowment of land and water are used to accelerate food production and facilitate income generation through proper planning, development, and management. Focus will be placed on ensuring that farmers have access to land and secured tenure, and are able to utilize this resource in a sustainable way. It will be undertaken by four components: *Land Reform and Capacity Building; Enhanced Land Husbandry; Expansion of Irrigated Land; and Improved Land Management*. The indicative cost is estimated at US\$104 million and the gap estimated at US\$100 million.

Program 4 will provide a framework for moving smallholders from upland cropping systems to the lowlands for improvement in crop productivity and create investment opportunities in agriculture for medium- to large-scale private sector investors.

^{6/} Ministry of Agriculture. 2009. Assessment and Institutional Reform at MOA. Monrovia, Liberia.

LASIP is to be an incrementally funded project to enable step-by-step updating. A summary of the LASIP public sector sub-program is presented in the Table. Data presented in the table are represented by the following columns:

- **Column (1) – Total Cost of LASIP:** The total amount of funding needed to finance LASIP.
- **Column (2) – Already Funded:** Programs and projects that are funded and operational as of early 2010.
- **Column (3) – Funding Gap:** The difference between Total Cost of LASIP and Already Funded, representing the additional investment needed.

The Already Funded programs and projects include those that have funding and are under implementation but that may end before the end of the 2011–2015 period. The scheduling information used for this table is based on actual implementation plans. GOL recognizes that donors are planning additional investments over the period of the LASIP—some of which will be substantial—that will reduce the Funding Gap.

Table: Summary of the LASIP for 2011–2015
(5-Year Program, US\$ Millions)

	TOTAL COST OF LASIP (1)	ALREADY FUNDED (2)	FUNDING GAP (3)
Program 1: Food and Nutrition Security			
Sub-Program 1. Food Crops Production and Productivity Enhancement	212	54	158
Sub-Program 2. Improved Nutritional Status and Management of Food Emergencies	115	25.5	89.5
Sub-Program 3. Smallholder Tree Crops and Agro-forestry Development	51.8	18.2	33.6
Sub-Program 4. Fisheries Development	22	12	10
Sub-Program 5. Livestock Development and Promotion	11.1	1.1	10
Sub-Program 6. Special Women and Youth Initiative	10	3	7
SUBTOTAL	421.9	113.8	308.1
Program 2: Competitive Value Chains and Market Linkages			
Sub-Program 1. Rehabilitation and Expansion of Rural Roads	170.65	20.15	150.5
Sub-Program 2. Rural Agriculture Infrastructure and Labor-Saving Technologies	74.47	22.97	51.5
Sub-Program 3. Market and Enterprise Development	18.61	8.61	10
Sub-Program 4. Rural Finance Services	40	0	40
SUBTOTAL	303.73	51.73	252
Program 3: Institutional Development			
Sub-Program 1. Rebuilding the MOA and Improved Coordination and Management	23.4	6.9	16.5
Sub-Program 2. Reviewing and Upgrading Selected Parastatals	6	0	6
Sub-Program 3. Building Extension and Enhancing Technologies	14.5	0	14.5
Sub-Program 4. Capacity Building of Farm-based Organizations	3	0	3
Sub-Program 5. Revitalizing Agriculture Research	40	0	40
Sub-Program 6. Renewing Agriculture Education and Training	31.5	0	31.5
SUBTOTAL	118.4	6.9	111.5
Program 4: Land and Water Development			
Sub-Program 1: Land Reform and Capacity Building	12	3	9
Sub-Program 2 : Enhanced Land Husbandry	37.2	0	37.2
Sub-Program 3: Expansion of Irrigable Land	11.5	0	11.5
Sub-Program 4: Improved Wet and Degraded Land Management	43	0	43
SUBTOTAL	103.7	3	100.7
TOTAL	947.7	175.43	772.3

Implementation Framework

Effective implementation is critical to achieving the goals of this investment program framework. Appropriate arrangements to ensure continued focus, commitment, coordination, accountability of efforts and resources, and outputs at the national, sector, and local levels are as follows:

- *Cabinet-level* oversight led by the President of Liberia.
- A national *Stakeholders' Forum* that meets periodically for the purpose of sharing information and experiences about the investment program implementation, reviewing implementation and policy direction that support implementation, and recommending appropriate program adjustments to the MOA and Food Security and Nutrition Technical Committee.
- The *Food Security and Nutrition Technical Committee*, the country's highest sectoral-level decision-making body, chaired by the Minister of Agriculture and including relevant institutions such as the Ministry of Finance, Ministry of Commerce and Industry, Ministry of Internal Affairs, and Ministry of Planning and Economic Affairs; Central Bank of Liberia; Environmental Protection Agency; Liberian Business Association; Liberian Bankers Association; and Liberia National Federation of Cooperative Societies to provide leadership and steer LASIP.
- The *Agricultural Coordination Committee* to provide technical assistance in management of the investment programs while the MOA prepares annual plans drawing from elements of the investment priorities for resource mobilization, allocation, and utilization.
- A *Donor Working Group* that will review progress reports, solicit the views of donors, advocate for resource mobilization within the donor community, and reassure donors of the government's continuing commitment to agricultural sector growth and development.
- A *County Development Steering Committee* that will coordinate inputs from the county level into MOA annual plans and programs. The committee will monitor their implementation in local communities at sub-county levels. Communities will be assisted through their decentralized structures to organize, contribute to, and develop annual plans, as well as participate in the monitoring and evaluation (M&E) of investment activities.

LASIP coordination and programming leadership will rest with the MOA. The LASIP management team will comprise of one Coordinator and four Program Managers, and with support staff, will be based at the MOA's Project Management Unit (PMU, see below).

Other Implementation Modalities

The GOL has begun to strengthen appropriate capacities consistent with the human, logistical, and other institutional requirements of LASIP to ensure timely implementation. Development partners will be called upon to provide the necessary technical assistance, where necessary, to satisfy these capacity requirements.

Consequently, GOL and partners will undertake consultations to commit and align funding to LASIP immediately following the CAADP/donors roundtable. The envisaged support will be based on the comparative advantage of individual partners.

Project Selection Criteria

Screening procedures for LASIP, whether donor-assisted or government-funded, have been adopted from the Comprehensive Assessment of the Agricultural Sector of Liberia. These procedures include the following criteria:

- **At the sector level:**
 - o Food crops and other crops and activities aimed at smallholders, such as rice seed, palm oil, fisheries, or livestock, are prioritized. Activities are all linked to nutritional needs of the population.
 - o Investments are sequenced in order to maximize impact.
- **At the project level:**
 - o Cost-benefit analysis has been conducted.
 - o Capacity-building factors have been included to assure sustainability.
 - o Market linkages and capacity development for private sector have been included, in addition to supply side activities.

Program and Project Implementation

Programs and projects continue to be implemented by various stakeholders in the agriculture sector: private investors, SMEs, NGOs, and the MOA.

Financial Management

Financial management at the Ministry of Finance is improving with the enactment and consequent implementation of the Liberia Public Management Act of 2009.

Liberia has attained the completion point of the Heavily Indebted Poor Countries Initiative (HIPC), having satisfied various triggers under the close supervision of the International Monetary Fund. Efforts are now focused on improving aid coordination and financial management systems that will result in the effective and efficient use of post-HIPC resources.

The MOA PMU will handle procurement, logistics, and financial systems for various projects and donors. The PMU is a new responsibility of the MOA and one of the major components of the ministry's ongoing reform and institutional strengthening agenda. The new financial system will help MOA to manage additional investment programs for the agriculture sector.

Monitoring and Evaluation

An MOA M&E framework has been developed that establishes targets and indicators specific to the programs and sub-programs within LASIP. Program M&E will provide information to facilitate performance evaluations and subsequent review of impacts.

The M&E will operate at two levels:

At the **national level**, progress on LASIP implementation will be reported to the Cabinet, the Stakeholders' Forum, and the Donor Working Group, as well as to the County Development Steering Committee at the local level by MOA, in conjunction with the Ministry of Planning and Economic Affairs.

At the **project level**, the M&E unit will report to MOA leadership, the Food Security and Nutrition Technical Committee, and the Agricultural Coordination Committee, thus informing all key stakeholders in the rural sector about progress toward planned outcomes and exit.

I. Background

Liberia is successfully transitioning away from nearly a quarter of a century of political instability and conflict. Under the leadership of President Ellen Johnson Sirleaf, the Government of Liberia (GOL) is taking steps to consolidate peace and enhance national security; revitalize and reconstruct the economy; restore education, health, and other basic services to 3.5 million Liberians; rehabilitate infrastructure; and ensure the rule of law and good governance. With the ardent support of international partners, Liberia has now been at peace for nearly six years, and the government has just begun the third year of implementation of the three-year “Lift Liberia” Poverty Reduction Strategy (PRS)—the country’s national reconstruction and development roadmap.

The Lift Liberia PRS seeks to accelerate conflict-sensitive, equitable growth by rebuilding roads and other important infrastructure; reviving traditional sources of national income that include mining, minerals, forestry, and agriculture; and establishing a competitive business environment to help diversify the economy over the medium term. Achieving these objectives will be difficult in the short term, as the GOL grapples with the effects of the global financial crisis.

The government considers agricultural growth to be critical to reducing poverty and solving the roots of the conflict. An example of the importance the administration attaches to agriculture is the production in early 2006 of the Statement of Policy Intent for the Agricultural Sector and a short-term action plan for agricultural recovery. These were quickly followed by the Comprehensive Assessment of the Agriculture Sector – Liberia (CAAS-Lib) project that evaluated the role and contribution of the sector to recovery and development. Results of the CAAS-Lib and other relevant information were subsequently used to develop the National Food Security and Nutrition Strategy (NFSNS) and the Food and Agriculture Policy and Strategy (FAPS). Together, these analytical studies and strategic documents are now helping the Ministry of Agriculture (MOA) to better lead and coordinate agricultural development.

The FAPS^{7/}, in line with the PRS, promotes private sector led growth with the ultimate goal of long-term sustainability both in food self-sufficiency and competitiveness in agricultural export commodities. This could be driven by increased levels of private capital investments in the sector, particularly in value chains such as processing, storage, and marketing. The MOA will concentrate its efforts on smallholders.

The transformation required in the food and agriculture sector to maximize its contribution to economic growth and poverty reduction can be realized by progress toward the following three fundamental orientations (as articulated in the FAPS):

1. *Improved national food and nutrition security:* Objective is to increase food availability and production in order to spur local economic development and food security.
2. *Enhanced agricultural productivity, competitiveness, and linkages to markets:* Focus is to strengthen efficiency, encourage innovation, foster sustainability, and leverage opportunities in national and external markets; broaden and strengthen private sector participation; increase public investments (mainly in rural infrastructure); and create an enabling macroeconomic environment.
3. *Strengthened human and institutional capacities:* The thrust is to institutionalize improved governance; strengthen civil society organizations; encourage demand-driven service delivery; establish effective and efficient public sector frameworks in agricultural

^{7/} Ministry of Agriculture. 2008. National Food Security and Nutrition Strategy: A Cross-Sectoral Strategy for the Government of Liberia.

planning, coordination, monitoring, and evaluation; reduce risks and improve coping mechanisms; mainstream gender and youth in agriculture and rural development; and ensure sustainable use of natural resources.

The Liberia Agriculture Sector Investment Program (LASIP) identifies priority areas from which investment projects that align national objectives and the Comprehensive African Agriculture Development Programme (CAADP) will be developed. LASIP will be a public-private partnership (PPP) in which activities along agricultural value chains, from production to domestic and export marketing, will be spearheaded by the private sector while the public sector concentrates on promoting the small farmer sector and other critical aspects of value chains with enabling policies and regulations and the delivery of essential services such as extension, research, and coordination. The CAADP is a strategic framework developed by African leaders to restore agricultural growth, develop rural economies, and enhance food security in an integrated fashion. Within the context of fostering agricultural-led economic growth, CAADP targets agriculture sector growth of 6% per annum and obliges African governments to commit at least 10% of their annual national budgets to agriculture in pursuit of this target. The protocols of the framework call on each African government to develop an agriculture sector investment program that, once approved by the governing authorities, is used as the basis of a “compact” between the government, African partners, and the international donor community.

Major donors, including the United States Agency for International Development (USAID), United Kingdom Department for International Development, Swedish International Development Cooperation Agency (SIDA), the World Bank, and the African Development Bank (AfDB), have committed themselves to using the CAADP framework to assist African countries to develop their agricultural sectors and ensure food security. Twenty billion US dollars have been pledged toward this end over the next three years.

The GOL adheres to the vision and principles of CAADP and is a signatory to the framework. This document was developed in partial fulfillment of the requirements of the framework. It presents the strategic choices Liberia has made for agricultural growth and development over the next ten years in an environmentally friendly and sustainable manner. The LASIP seeks to transform Liberian agriculture and, in so doing, maximize the sector’s contributions to economic growth, employment and income generation, food and nutrition security, and poverty reduction. Within this context, the MOA will concentrate its actions and efforts on smallholders with a focus on food crops (rice, cassava, and vegetables), value chains, and raising income.

Formulation of the LASIP benefited from the availability of secondary information and stakeholder consultations. Major sources of information included Liberia and the Comprehensive Africa Agriculture Development Programme: A Stocktaking Report of 2009; the FAPS of 2009; the NFSNS of 2008; Liberia’s PRS of 2008; various county development agendas of 2008; CAAS-Lib of 2007; and the National Medium-Term Investment Program (NMTIP) of 2006. Multi-stakeholder, participatory, and inclusive approaches were employed in developing these seminal papers—all of which were used in the preparation of this document. LASIP was initially reviewed at a CAADP Experts Consultation on September 4, 2009; an Interagency and Donors Consultation on September 30, 2009; and a Validation Workshop on October 14–16, 2009. These events occurred prior to the Compact signing in October 16, 2009. Recently, the LASIP has undergone extensive review and revision. Review workshops, through which a wide range of stakeholders from government ministries, the private sector, nongovernmental organizations (NGOs), and civil society provided input into LASIP revision, were held on May 18 and May 21, 2010. Results of the workshops were incorporated into the LASIP and a Validation Workshop was held on May 28, 2010. Following receipt of the CAADP Post-Compact Review: Liberia Technical Review Report, Pillar Support Team Inputs for Liberia, and CAADP Technical Review Panel Key Findings, appropriate comments were again incorporated into the document that was once again

validated by stakeholders and development partners on September 16, 2010, and accordingly revised.

This report starts with a brief description of conditions in Liberia, followed by a discussion of agriculture sector issues. How LASIP was developed is highlighted along with details regarding priority areas for investment and the financing of these investments. Arrangements for LASIP implementation, and monitoring and evaluation (M&E) are also presented.

1.1 Political, Economic, and Social Conditions

1.1.1 Historical Overview

Liberia is Africa's oldest independent republic. The country was founded and first settled in 1822 by freed slaves from the United States, and independence was declared in 1847. Pervasive social tensions and cleavages in the years that followed resulted in the overthrow of the government in 1980. 1989 saw the beginning of a 14-year civil war that destroyed countless lives, decimated institutions, and ruined infrastructure, basic services, and the economy. Following presidential and legislative elections in October and November 2005, Mrs. Ellen Johnson Sirleaf became Africa's first democratically elected female head of state.

1.1.2 The Economy

Economic Growth: Economic expansion is underway in Liberia; real growth rates of 7.8% and 9.5% were experienced in 2006 and 2007, respectively (Annex Table 1), but the global financial crisis and delays in the resumption of full-scale mining and forestry operations (traditional drivers of growth) limited economic growth to 7.1% in 2008 and 4.5% in 2009. Performance would have been worse were it not for the agriculture and services sectors that accounted for 42.2% and 25.8% of real gross domestic product (GDP), respectively (Annex Table 2). In summary, the average growth for the last four years was 7.2%.

Along with the expansion has come an increase in employment and inflation. Total employment rose from 141,581 in 2007 to 295,354 in 2008; agriculture and forestry accounted for nearly 60%, and general merchandise, wholesale, and retail trade industry for 6.4% (Annex Table 3). The rate of inflation also increased from 11.4% to 17.5% over the same period, driven mainly by price increases in the international market for food and fuel.

Economic growth has improved public finances and related indicators. The cash-based budget increased from US\$80 million during Fiscal Year (FY) 2005/06 to US\$327 million in FY 2009/2010 and US\$347 million for the draft budget in FY 2010/2011. The Liberian dollar (L\$)/US dollar (US\$) exchange rate remained relatively stable as did the real effective exchange rate.

Money and Banking: The eight fully licensed commercial banks operating in Liberia had gross assets of L\$19,034.0 million, an increase of 35.4% over the level recorded in 2007. Total capital or net worth was L\$2,311.0 million, an increase of 37.5% over 2007, and deposits grew by 43.5%, from L\$9,298.0 million to L\$13,341.8 million at the end of November 2008.

Commercial bank credit at the end of November 2008 was L\$6,234.0 million, an increase of 46.7% over 2007. Agriculture experienced a slight increase in 2008, from 4.9% of credit outstanding in 2007 to 5.0%, for a total of L\$310.8 million; this was a lower share of commercial bank credit compared to 2006 when the sector received 7.1%.

External Trade: Liberia's external economic relations have brightened since the inception of the new administration in 2006. Exports rose by 19.3% in 2008 to US\$238.8 million, from US\$200.2 million in 2007 (Annex Table 4); major export commodities were rubber, gold, and diamond with rubber accounting for 86% of total exports at the end of November 2008. However, import payments totaled US\$797.8 million in the same period, up from US\$501.5 million in 2007 (Annex Table 5); this increase was driven mainly by rice imports that accounted for 15.8% of total import payments. At the end of November 2008, the country's

trade balance grew to negative US\$559.0 million from negative US\$301.3 in 2007, evidencing the urgency for Liberia's traditional productive sector of agriculture, forestry, and mining to regain full operations.

National Debt: In 2005, Liberia's total debt was estimated at US\$4.6 billion. Following the normalization of Liberia's relations with international financiers that began in 2006, arrears to multilateral institutions have been cleared and an agreement reached for a comprehensive rescheduling of outstanding obligations to the Paris Club group of creditors consistent with the Enhanced Heavily Indebted Poor Countries Initiative (HIPC). Liberia has followed the International Monetary Fund's (IMF) program that emphasizes strong fiscal and monetary objectives. Liberia successfully achieved these objectives through the end of 2009 and attained the HIPC "completion point" in June 2010, thus qualifying for debt forgiveness and access to loan facilities through the international financial institutions (IFIs). The government has also commenced implementation of a validated domestic debt payment strategy consistent with its HIPC completion triggers.

Global Financial Crisis: Improvements in economic performance since 2006 are being undermined by the global financial crisis. With lower prices and demand for rubber, iron ore, and timber, output and foreign investment in these industries have begun to slow. As a result, it is anticipated that real output growth will decrease from the 7.1% recorded in 2008 to 5–6% in 2009—substantially lower than previously expected. While expansion of subsistence agriculture and stability in donor assistance are projected to drive growth, the rate of growth of government revenue (and thus spending) is slowing after several years of performing beyond expectations. Planned government response to the crisis includes reductions in business and individual tax rates.

1.1.3 Social Conditions

Liberia faces overwhelming reconstruction and development challenges after a quarter of a century of civil war and political instability. Sixty-four percent of its nearly 3.5 million people, equally divided between males and females, are poor; the per capita GDP of US\$132 in World Bank 2008a rose to only US\$362 in 2009, and Liberia is ranked 169 out of 182 countries in the United Nations Development Programme (UNDP) Human Development Index.

Approximately half of the population is either food insecure or highly vulnerable to food insecurity. While food security in rural Liberia has remained at the same level, with approximately every second household experiencing poor or borderline food consumption, insecurity has increased in the greater Monrovia area due to food price hikes and the country's dependency on food imports.

Although improving, Liberia's health systems remain in a state of disrepair in the aftermath of the conflict. Out of the 325 health facilities available before the war, over 90% were partially or wholly destroyed. In 2007, life expectancy was just 45 years, and there were only 51 Liberian physicians and 297 nurse midwives. Lack of financial and physical access to healthcare and the quality of healthcare delivery are major concerns. In general, healthcare is more accessible and of better quality in urban areas than in rural areas.

The educational system is weak. Many teachers have little or no training and there are substantial non-gender rural-urban differentials. Adult literacy rates also display a gap: outside of Monrovia, only about one-third of women are literate, compared to about 60% of men. Public primary gross enrollments have increased over the post-conflict years but are still low. Secondary and tertiary enrollment rates are even lower. Costs remain a barrier to education, despite the government's free and compulsory primary education initiative. The quality of instruction and instructional materials also leaves much to be desired.

1.2 Agriculture Sector Issues

1.2.1 Strategies and Policies

The government has prepared three important agricultural policy documents since 2006: the Statement of Policy Intent for the Agricultural Sector of 2006, the 2008 NFSNS, and the 2009 FAPS.

The Statement of Policy Intent for the Agricultural Sector was an interim measure that envisioned the holistic development of agriculture into a sustainable, diversified, income-generating, modernized, and competitive sector well-integrated into domestic and international markets. In this regard, the GOL sought to promote the production and productivity of key food and tree crops, fisheries, forestry, and animal husbandry; increase domestic and sub-regional commerce; foster on- and off-farm diversification; and facilitate agro-processing and sustainable management of natural resources. The Statement of Policy Intent also recognized the necessity of crafting effective land administration, flexible land use planning approaches, adaptive sustainable land management practices, and other improvements.

The MOA is promoting agricultural development through inclusive and private sector led growth while it concentrates on providing a sound policy and regulatory environment, as well as essential service delivery such as extension, research, and marketing infrastructure that support smallholder farmers, thus improving food security and contributing to poverty reduction.

The key objective of the NFSNS is to make certain that “all Liberians have reliable access to the food they need and are able to utilize that food to live active and healthy lives.” It seeks to accomplish this goal by addressing four separate dimensions of food security: availability, access, utilization, and vulnerability. To enhance food availability, the strategy calls for formulation of a policy statement on food self-sufficiency, the removal of production constraints farmers face; diversification of food production; improvement of post-harvest infrastructure; safeguarding of communal resources that are important food sources; maintenance of predictable and stable food imports; strengthening of Liberia’s strategic food reserve mechanisms; and appropriate use of international food assistance.

To improve access to food, factors of production are to be secured, markets for both food and non-food produce improved, and safety net programs strengthened. Strategies for improving food utilization and nutritional status include promotion of child growth and essential nutrition actions; saving acutely undernourished children and meeting the food and nutrition needs of those affected by HIV; improved nutritional caring practices and fortified foods with micronutrients; and enforced food standards, diversified diets, and increased access to safe water, sanitation, and proper housing. Finally, the NFSNS calls for enabling factors such as sufficient human capacity, improved knowledge on household food security, and strengthened community-level actions.

Liberia is a food insecure country with 50.5% of the population food insecure or highly vulnerable. Increases in global food prices during the 2008 and 2009 economic meltdown presented both threats and opportunities for Liberia. The FAPS was developed within the context of the Lift Liberia PRS and these global developments, and it identifies specific sector and sub-sector policies and strategies that will be implemented to revitalize and strengthen the food and agriculture sector and to reduce food insecurity.

The specific objectives of FAPS’ pro-equity stance are improved food and nutrition security, enhanced competitiveness and market linkages, and capacity building. The guiding principles comprise macroeconomic stability, pluralism, and clarity of roles; enhanced private sector involvement and competition; self-reliance; maximization of comparative advantages; value addition; sustainable development management; and decentralization.

To improve food and nutrition security, FAPS advocates additional investment in food production^{8/} as per the Liberian response to the food crisis. The response strategy recognized that "...Global increases in food prices are threatening food security and undermining economic recovery. Progress in restoring peace and security in Liberia could be undermined if the availability of, access to, and proper utilization of food are constrained..." The comprehensive strategy identified actions on three fronts:

1. Mitigating the impacts, as far as possible, of domestic price rises and ensuring consistent supply;
2. Maintaining access to food and improved nutritional well-being for vulnerable populations through safety nets; and
3. Promoting rapid domestic food production through the use of technology and innovation.

Interventions to promote competition and market access include public investment in essential market infrastructure and services, and private sector development. Finally, FAPS seeks to improve governance and facilitate demand-driven service delivery, increase institutional efficiency particularly in the public sector, provide safety nets for vulnerable groups, mainstream gender and youth concerns, and promote sustainable use of natural resources in order to build the capacity of people and organizations in the sector.

1.2.2 Structure and Performance of the Agriculture Sector

Liberian agriculture comprises food and tree crops, fisheries, and livestock. Rice and cassava are the main food crops, and rubber, oil palm, and cocoa are the dominant export-oriented tree crops. Fisheries consist of industrial and artisanal industries, as well as aquaculture, while livestock is largely small ruminants.

Structure of Production: Forest-based farming systems cover the largest proportion of the land area in Liberia. They include tree crop-based systems in which vegetables and other food crops are produced on a minor scale, mostly in the central belt of the country; root crop-based systems (with cereals) concentrated in the northern region; and fishing and land-based mixed cropping enterprises along the coastal belt.

The three main structures of production are: (i) large plantations that produce major export crops such as rubber, oil palm, and to a lesser, degree coffee and cocoa; (ii) domestically owned, medium-sized commercial farms that cultivate industrial crops for export and livestock for the local market; and (iii) small household farms that use traditional production techniques and limited improved inputs.

Food Crops: Food production is growing in post-conflict Liberia. However, crop yields are low, value chains are undeveloped, and institutions that provide support services are very weak. Contributing factors include lack of improved planting materials; absence of integrated nutrient and pest management; high post-harvest losses caused by storage, processing and other marketing infrastructure inadequacies; and poor market access.

Rice is the staple food with annual per capita consumption of 53 kilograms (kg). According to estimates, 71% of farm families are involved in the cultivation of rice. The resumption of agricultural activities in post-conflict Liberia resulted in a sharp increase in rice production, from 85,000 tons in 2005 to 144,000 tons in 2007. Despite this 70% increase in domestic rice production, Liberia remains a net importer of this crop. Imports accounted for 60% of the 322,000 tons consumed in 2007, and the import bill doubled from about US\$100 million in 2007 to approximately US\$200 million in 2008 due largely to global food price increases.

Notwithstanding favorable agro-ecological conditions, rice productivity is low. It is estimated that average yields of 736 kg/hectare (ha) and 815 kg/ha are obtained from upland and lowland rain-fed production on an average farm size of 1.0 ha. Globally, average rice yields

^{8/} Ministry of Agriculture. 2008. Liberia Response to Food Crisis. June 2008, pp 1.

in recent years have been at 3,900 kg/ha for paddy rice, while in sub-Saharan Africa, yields have recently averaged 1,500 kg/ha—twice the yield of Liberia.

Cassava is the second most important food crop with 2007 production estimated at 1.7 million wet tons. Crop area averages 0.5 ha, and yields are estimated to be between 6 and 10 metric tons (MT)/ha on upland farms. Other food crops include vegetables such as pepper, bitter balls (garden eggs), and groundnuts. Urban and peri-urban vegetable production is practiced on a limited scale, taking advantage of the ready market in urban centers.

Tree Crops: Rubber, oil palm, cocoa, and coffee accounted for 22% of the GDP in 2005, and tree crops are a significant element of export earnings and employment. It is estimated that more than half of the agricultural households may currently be directly or indirectly involved in tree crop production and in related down-stream activities; Nimba, Bong, and Lofa counties are the major producers.

Rubber is the most important cash crop in Liberia. It is estimated that a little over 200,000 ha of rubber have been planted in Liberia, of which 65,000 are industrial estates and 130,000 are small and medium-size private farms. In 2005, with mining and forestry having ground to a halt and subsistence agriculture only beginning to recover, the rubber sector accounted for more than 20% of Liberia's total GDP and 90% of its total exports. Three years later, rubber's influence remains unchallenged; at the end of November 2008, rubber exports accounted for 86.1% of total exports.

The rubber industry generated approximately US\$218 million in revenues in 2007, and it creates a steady stream of employment and supports the livelihoods of thousands of smallholder farmers. In 2008, foreign-owned concessionaires and Liberian commercial farmers employed over 14,000 people and contributed to the economy more than US\$40 million in wages. In the same year, foreign-owned concessionaires and Liberian commercial farms spent a minimum of US\$10 million on education, health, housing, and road maintenance.

Cocoa is Liberia's second most important export crop, with about 40,000 households engaged in its production. Although official exports were 3285 tons in 2008 and between 2000 and 3000 tons annually in earlier years, total production is estimated at about 10,000 tons from about 30,000 ha. Most of the production is informally exported to international markets via neighboring countries. Average yields of 400 kg/ha experienced in the 1980s have declined to between 100–200 kg/ha. Yields within West Africa are 400 kg/ha, but these can be increased to 1.0–1.5 ton/ha using the new hybrid varieties grown in Ghana and Côte d'Ivoire.

Oil palm is an essential tree crop for smallholders. Liberia's pre-war crude palm oil (CPO) output of between 135,000 and 170,000 MT has fallen to about 35,000 MT. A net exporter of palm oil until the late 1980s, the country now imports about 7,000 tons of edible oils, i.e., about 20% of a total estimated domestic demand. A significant volume of CPO (2,000–3,000 MT) is exported to neighboring countries through informal border trade. It is estimated that there may be about 25,000 ha of medium-to-large oil palm plantations, of which approximately 17,000 ha are state-owned plantations; smallholder farms represent another 75,000 ha. It is also projected that the annual production of existing plantations is about 20,000 MT of CPO, with about half of the country's total production coming from wild groves.

Coffee experienced a large expansion in area harvested and production between the 1960s and the 1980s, increasing from 8670 ha and 4410 tons to 21,310 ha and 8250 tons, respectively. While export quantities averaged 7600 tons in the 1980s (perhaps due to cross-border trading), only 124 tons were reported to have been exported in 2008. In spite of extension programs under various agricultural development projects in the past, yields have remained low.

Fisheries: Liberia's fisheries sector—which includes an established marine fishery involving industrial and artisanal fishing activities, an inland fishery that is exclusively artisanal, and aquaculture practiced in rural areas through fishpond culture—provides about 3% of the country's GDP. However, this sector provides employment for about 37,000 fishers and processors and contributes significantly to nutrition in terms of protein intake, making it of importance locally.

Liberia's 560-kilometer (km) coastline and the continental shelf, which averages 34 km in width and extends 200 nautical miles offshore, provide about 20,000 km² of fishing grounds. These areas hold considerable maritime fish resources, including the main oceanic pelagic species (e.g., tuna). Crustaceans (e.g., shrimps and lobsters) are less abundant but of much higher value than finfish species.

The pre-war estimated maximum sustainable yield (MSY) of the continental shelf area was 180,000 MT/year. Liberia also has approximately 1810 km of rivers that traverse the country, and countless perennial swamps and inland water bodies with enormous potential for increased production from inland fisheries and aquaculture. The estimated MSY of inland fishery is 40,000 MT/year; illegal fishing, however, costs Liberia about US\$12 million annually.

Artisanal fishery provides livelihood for 33,120 full-time fishers and processors in both marine and inland waters—about 61% of whom are Liberians and 60% are female. Artisanal fish landings were estimated to be 7,700 MT in 2004 at ten sites, making up about 75% of the total fish landings.

Aquaculture was developed in the 1970s with technical support from donor projects. It has now reverted to a subsistence activity with production estimated at 38.81 MT in 2004. At its peak in the 1980s, 3,600 fishers nationwide used 450 ponds of various sizes with a total area of about 17.5 ha distributed in 159 communities around the country. However, most of the ponds have not been in use since the early 1990s.

Livestock: Although Liberia has an estimated 2 million ha of pastureland, the livestock sector accounts for only 14% of agricultural GDP. Estimates suggest there is slow growth in aggregate livestock numbers comprising mainly cattle, poultry, and swine. Traditional livestock farmers dominate, as was the case before the war. According to CAAS-Lib, traditional systems accounted for 100% of the holdings of cattle, goats, and sheep; 58% of pigs; and 100% of guinea fowl. A few modern peri-urban livestock farmers produced rabbits, guinea pigs, poultry, and ducks.

According to data from the Ministry of Commerce and Industry (MCI), imports of meat and meat products in 2005/06 amounted to US\$6 million (Annex Table 6). In addition, an estimated 26,000 head of live cattle and 15,000–16,000 head of live sheep and goats were imported from neighboring countries (estimated to equate to 3,000 and 312 MT, respectively). The Central Bank of Liberia (CBL) has indicated that the cost of imports for food and live animals grew by 56.8% in 2008 to US\$205.3 million, driven mainly by rice imports, which accounted for 61.3% of expenditures in this category.

Natural Resources

Liberia is blessed with ample natural resources that can sustain a vibrant agricultural sector and contribute significantly to poverty reduction.

Climate: The country lies in the tropics. Annual rainfall is approximately 1,700 mm in the north and in excess of 4,500 mm in the south. It is generally accepted that most areas have a water surplus for five to eight months each year. Average temperatures vary between 24°C and 28°C, while relative humidity ranges from 65–80%. Sunshine averages two to eight hours per day, and wind conditions are described as generally mild.

Water Resources: Liberia shares international water resources with her neighbors; nine major perennial river systems and short coastal watercourses drain approximately 66% and

3% of the country, respectively. The irrigation potential is about 600,000 ha, of which only 1,000 ha can be described as relatively developed. The total water-managed area in 1987, including rice swamp control, was estimated at about 20,100 ha; these include equipped lowlands (2,000 ha) and non-equipped cultivated swamps (18,000 ha).

Land and Soil Resources: Liberia occupies a land area of approximately 111,370 km², of which 96,160 km² (86%) is dry land and the remaining 15,210 km² is covered by water. The country's coastline is made up of four physiographic units: coastal plains (up to 100 meters above sea level [MASL]), interior hills (100–300 MASL), interior plateaus (300–600 MASL), and mountainous areas (in excess of 600 MASL). Land types present in Liberia include tidal swamps, coastal beach plains, flood plains, valley swamps, and low and high hills, all of which have different land use capabilities (Annex Table 7).

Land Tenure: Inconsistencies in statutory and customary laws that govern land in Liberia have resulted in several types of land holding arrangements with different levels of tenure security; these range from deed holders with a comparatively high degree of tenure security to squatters with no security. Customary occupation, renting or leasing, and borrowing of land fall in between these extremes. Land is an emotional issue in the country. A high level of resentment is directed toward long leases granted to foreign investors, conflicts between communities are becoming increasingly problematic, and the land rights of women remain unresolved particularly under customary law. A Land Commission has now been established to propose, advocate, and coordinate reforms of land policy, laws, and programs in Liberia.

Agricultural Institutions and Markets

The MOA is the GOL's central policy-making body, and is responsible for promoting agricultural development and regulating the sector. In 2008, the GOL commenced a focused transition from humanitarian assistance to early recovery and development following 14 years of conflict. The GOL considers a functional and vibrant “inclusive” agriculture sector critical to the consolidation of peace and to economic growth and development.

However, Liberia was affected in FY 2008/2009 by the international food price crisis. In response to the challenges posed by the crisis, the MOA took a leadership role in the rural sector in accordance with GOL policies. However, the effectiveness of the agency is currently limited by several constraints including the need to redefine role and functions, restructure departments to support the decentralization process, and rebuild technical services as per the institutional assessment completed in 2009^{9/}.

In 2008/2009, the MOA's staff was estimated to be 350. In order to support the PRS' emphasis on smallholders and to expand support services beyond the central level, the MOA was authorized in FY 2008/2009 to double its budget from US\$3.5 million to US\$7.0 million to be able to expand its staff level to 500 in 2010–2012. While the MOA is moving forward and recovering from years of neglect, various institutional weaknesses remain and include the following:

- The MOA is understaffed technically and overstaffed administratively.
- Seventy-five percent of the MOA's staff is in Monrovia, and 25% is in the rural areas.
- In many counties, the MOA has between five to ten staff, and the ministry is absent in many districts. For example, some districts have no MOA extension staff and their functions have been replaced de facto by NGOs.
- Many existing staff are computer illiterate and over 50 years in age.
- Staff lack some of the means with which to operate (e.g., intermittent power supply, intermittent access to e-mail), while extension agents are constrained by various issues (e.g., limited mobility, low salaries, and inadequate technical knowledge and skills).

^{9/} Ministry of Agriculture. 2009. Assessment and Institutional Reform at MOA. Monrovia, Liberia.

- Some functions of the Ministry of Internal Affairs (MOIA) and the MOA are duplicated. The MOIA has extension workers in the same areas/fields and at times, in the same counties as the MOA.
- MOA agricultural research programs are very limited, as are agricultural products quarantine programs.
- MOA information management and its systems for communicating with the general public are weak.
- The existing financial management system lacks sufficient equipment to produce timely financial information.
- The performance management system is weak, resulting in limited follow-up on discipline and professional behavior.

The MOA is currently functioning under very considerable constraints. The gap between capacity and needs is wide. The MOA needs significant investment in the form of logistical support, institutional and human resource development, training, and support for operations in the field. Since 2008/2009, the ministry has made strides to move its staff and new hires to the local level and establish an operational MOA at county and district levels to assist smallholders.

The MOA is organized at the headquarters level into four major departments: Planning and Development; Rural Development, Extension, and Research; Technical Services; and Administration.

The Planning and Development Department is responsible for planning and policy analysis, M&E, statistics, and program coordination. The Technical Services Department manages a number of activities that are somewhat distinct from field agriculture such as aquaculture; technical expertise for food and tree crops, land, and water resources; and animal resources. Administration includes human resources, financial information, and asset management. The Rural Development, Extension, and Research Department concentrates primarily on extension but also conducts research through the Central Agricultural Research Institute (CARI).

The *Liberia Produce Marketing Corporation (LPMC)* was created by an act of legislation in 1961 to market Liberian produce (cocoa, coffee, palm kernel and palm products, and piassava); it was also charged with providing a farm advisory service at all levels. The corporation exercises a monopoly mainly over the purchase and export of coffee and cocoa. At present, LPMC has no capacity to procure locally and has transferred its statutory mandate to private traders and a subsidiary of another parastatal organization—the National Social Security and Welfare Corporation.

The *Liberia Rubber Development Authority (LRDA)*, formerly the Liberia Rubber Development Unit, was established to build the capacity of smallholder rubber producers with farm sizes in the range of two to five acres by providing improved seedlings, extension services, and marketing. It currently lacks the capacity to carry out any of these functions despite receiving allocations in the National Budget since 2006 (albeit far below LRDA's minimum requirements). Efforts are underway to ensure that its responsibilities are executed in some form.

The *Cooperative Development Authority (CDA)* is responsible for facilitating and strengthening cooperative societies throughout the country. It was set up to build awareness of the cooperative movement, assist in the organization and development of cooperatives, register and certify cooperatives, and advocate on their behalf. Several initiatives to revive the agency are now underway; these include revision of the 1936 Cooperatives Act, training of headquarters and field staff, development of procedures and regulations, and revival of field operations.

The *Liberia Market Association (LMA)* was founded in 1963 and it became a semi-autonomous government institution in the 1970s with the mandate to manage markets. The LMA has generally failed to meet its obligations despite extracting fees from traders. Members point out that services such as waste disposal, toilet facilities, roof repairs, storage, and day care facilities are not being provided by LMA, resulting in the payment of additional fees to private individuals to provide some of these services.

The Agricultural and Cooperative Development Bank was established in 1978 to make loans to farmers and their organizations but has since ceased operations. Farmers did not derive much assistance from the bank during the years it existed for various reasons. The demise of the bank has left the agricultural sector with no specialized financial intermediary and little or no access to institutional credit.

Two other government institutions that provided services in the past but that are no longer active are the *Liberia Cocoa and Coffee Corporation (LCCC)* and the *National Palm Corporation (NPC)*. LCCC was established to build the capacity of cocoa and coffee growers by providing farm advisory services such as nursery development, farm layout, and planting operations. It became financially insolvent and collapsed in the mid 1980s. The NPC oversaw and managed government-owned oil palm holdings but failed in the late 1980s due to poor management.

The *University of Liberia College of Agriculture and Forestry*, *Cuttington University's Agriculture College*, *WVS Tubman University*, and *Booker Washington Institute* are the Liberian institutions that offer secondary post-secondary agricultural education. Curricula, instruction, and support services at both colleges have to be significantly improved if the person power needs of the agriculture sector are to be met any time soon.

Liberia's entire agriculture sector is being assessed through several initiatives managed by the Governance Council and Civil Service Agency (CSA) will select institutions and/or parastatals to be upgraded to support the "inclusive and market led growth" strategy. Under this review, some parastatals will be closed, privatized, or transitioned to a regulatory institution, while others may be restructured to take on supervisory and capacity building roles that conform to the new environment.

The *Ministry of Internal Affairs (MIA)*, *MCI*, and the *Ministry of Finance (MOF)* are important government institutions. The MIA coordinates local government administration and in so doing promotes and encourages farming. The MCI has a mandate to formulate, implement, and review policies and legislations for small and medium enterprises (SMEs), including agricultural-based processing enterprises. The MOF influences agricultural development through its management of government revenues and expenditures.

Marketing Processes

Input Marketing: Actors in input markets include parastatal institutions, private suppliers, international donors, and NGOs. As NGOs and donors shift their focus from relief to development assistance, markets are becoming increasingly important for sourcing essential farm inputs.

Apart from seeds (most of which are produced by seed farmers) and hand tools, very few other inputs are used by smallholders. The only fertilizers available on the market are the compound fertilizers 15-15-15 (most commonly used), urea, and super-phosphate. Some of these are imported from neighboring countries by petty (i.e., cross-border) traders, as there is a limited number of agriculture supply stores in the country.

Import duties on most agricultural tools range from 2.5–5% of commodity, insurance, and freight value. Agricultural machinery such as tractors are subject to higher duties of 10–25%, and implements like hammers and wheelbarrows are taxed as building materials of 5–7%. In late 2007, the President of Liberia issued an Executive Order to remove tariffs on agricultural

equipment and supplies to ensure the availability and affordability of these essential inputs due to the food crisis.

Output Marketing: Private sector firms (mainly small operators) and individuals dominate the food crops marketing system. With the exception of imported rice, fish, and dried beans, local products dominate food crop marketing, and most produce is marketed in close proximity to production areas, suggesting weakly integrated markets. The origin of most imported rice found in rural markets is Monrovia, the gateway to the country.

Large private sector operatives account for an overwhelming proportion of rubber exports, while the majority of palm oil, currently produced only by smallholders, is consumed at home. Surplus of the latter is sold either to itinerant buyers or at regional markets. With the near demise of LPMC, several private firms and a subsidiary of the National Social Security and Welfare Corporation are buying and exporting cocoa and coffee with licenses obtained from the corporation.

Rural Financial Services

Very little credit is channeled to the rural economy and the agricultural sector, rendering farmers and other rural dwellers in need of financing to depend on informal mechanisms. In 2008, agriculture accounted for only 5.0% of total commercial bank credit, up slightly from 4.9% in the preceding year but lower than the 7.1% received in 2006. According to the 2006 Comprehensive Food Security and Nutrition Survey, 53% of all rural households reported obtaining credit from friends or relatives through one of three types of susu clubs; formal institutions and NGOs provided virtually no credit.

The GOL, through the CBL, is taking steps to promote financial inclusion and the integration of microfinance by creating an enabling policy and regulatory environment, establishing a supporting infrastructure, and building sustainable microfinance providers. The framework (the Liberian Strategy for Financial Inclusion) consists of three elements: a) a vision centered on poverty reduction through private sector initiatives; b) a strategy that emphasizes a bottom up approach to financial inclusiveness; and c) concrete activities to be pursued over the five-year planning horizon.

A number of other microfinance institutions has sprung up around the country through the initiative of NGOs. The UNDP, as part of its Community-Based Recovery Program, has also started promoting credit unions in two counties, and the AfDB Agriculture Sector Rehabilitation Project promotes credit unions in selected counties on the southeast.

Rural Infrastructure

Rural infrastructure—rural roads, markets, irrigation systems, water supply, and health and educational facilities—is essential to the quality of life in rural areas, as well as being an important engine for economic development. Roads are the major transport sub-sector within the country; domestic aviation services have only recently been restored to a limited number of cities and towns, and ocean transportation between the country's four ports meet a very small portion of the country's traveling requirements.

Primary roads make up about 1,798 km, of which 561 km are paved. Secondary roads (2,504 km) and feeder roads (1,425 km) are unpaved. Assuming that about half of the other roads are farm-to-market roads, the rural road network (excluding primary and urban roads) would amount to about 7,830 km, giving a rural road density of 0.07 km per km² for Liberia. As a result of degradation during the last two decades of war and emergency, the paved roads are severely pot-holed and the rest of the road network is in a very poor state of repair (many feeder roads have reverted to jungle). Vehicular travel in rural areas is difficult in the dry season and impossible in many places during the rainy season.

There are few trucks to transport goods, and there is a weak market for trucking services. The Liberian trucking fleet was decimated during the conflict; today there are an estimated 20–30 trucking companies in Monrovia with a total trucking capacity of less than 2000 MT.

Commercial truck carrying capacity ranges from 5–20 MT per vehicle. Most trucks imported into Liberia are secondhand, and average 8–10 years in age.

The consequence of poor roads and few transport services is high transport costs, particularly during the rainy season and especially on poor quality roads. Because of the inadequate coverage and degraded state of the existing rural roads network, access to markets in rural areas is poor. This access is crucial for households to make purchases, as well as exchange and sell food and other agricultural products; large parts of Liberia's traditional farming areas are isolated from markets.

The physical condition of marketplaces is poor with few facilities for storage and low hygiene standards. Marketing takes place either within structures or in open spaces. Some market structures are roofed buildings with concrete floors, with or without walls. These structures may have tables that are concrete and permanent, or wooden and movable. Sellers in markets without walls must store commodities elsewhere at night.

Storage facilities are rare; those available often lack ventilation and pallets to elevate produce off the ground, and costs depend on the quantity of commodities stored. The land on which marketplaces are located is usually privately owned, although some are located on government-owned land. The ownership of the land does not appear to be a major factor in the operation of marketplaces in Liberia. Few markets have systematic waste disposal, potable water, or toilet facilities.

1.2.3 Private and Public Sector Involvement

The FAPS recognizes the role of the private sector in the agriculture sector as the nation moves away from economic recovery to growth and development. It also recognizes the role of the public sector in creating an enabling environment regulating and promoting the formulation of policies that stimulate private sector involvement and lead to overall growth and development.

Whereas the public sector within this context is clearly defined, the private sector includes large commercial investors, SMEs both in agriculture and services, and small farmers (those with less than 15 acres of land).

For commercial investors, Liberia has a “one-stop-shop” process in which taxation, land, and other constraints faced are handled by the National Investment Commission (NIC). The NIC works closely with the MOA and other line ministries that form the Inter-Ministerial Concession Committee (IMCC) and that have entered into concession agreements with various commercial investors for development of the agriculture sector.

As shown in Table 1, investment in the private sector includes around 230,000 ha in palm oil, 435,000 ha in rubber, 17,000 ha in rice, and 1,000,000 ha in forest management contracts, of which about 20,000 ha were issued as timber sales contracts.

Table 1: Private Sector Concessions in Agriculture and Forestry
(As of March 2010, US\$)

NO	NAME	ACREAGE	INVESTMENT NIC
1	PALM OIL		
	Total	549,295 acres	\$ 2.348 million
		228,874 ha	
2	RUBBER		
	Total	1,043,920 acres	\$145.00 million
		434,966 ha	
3	RICE		
	Total	42,065 acres	\$32.5 million
		17,525 ha	
4	FORESTRY		
	Total	1 million ha	\$12.5 million
	TOTAL		\$2.578 million

Source: National Investment Commission, 2010.

Presently, private commercial sector investment represents over 800,000 ha and 40,000–60,000 formal jobs. The private commercial sector provides revenue for the GOL, and the government is confident that private sector-led growth will boost employment and income in the upcoming years as its PPP approach gains traction.

As stated earlier, the public sector under LASIP will concentrate on assisting smallholder farmers, youth, and women by promoting the rebuilding of urgently needed infrastructure and providing essential agricultural services. The investment programs and sub-programs of LASIP were thus identified and grouped according to the CAADP common framework and the GOL's priority of inclusive and equitable growth that targets the empowerment of women and youth. Government, through its support of LASIP, will in this vein focus on food and nutrition security enhanced by building rural infrastructure, improving value chains, and developing the country's abundant land and water resources.

1.2.4 Challenges and Opportunities

A number of ways to transform challenges into opportunities for agricultural development were identified during LASIP design through consultations and literature review. These challenges include weak land management and water control systems; limited market access and linkages on account of limited feeder roads and bad secondary road conditions; non-diversification and rudimentary production techniques; high pre- and post-harvest losses; poor food value chains including storage, processing, and marketing channels; unimproved planting materials, limited use of fertilizers, and rudimentary tools; lack of formal agricultural credit; insufficient farming household labor; poor pest management practices; low-quality agricultural training and extension services; and low capacity of core agricultural institutions. As a result, there are no incentives to produce a marketable surplus and commercialization that, while present in the monetized, export-oriented sub-sector, remain absent in the traditional, subsistence food-producing sub-sector.

These challenges have been categorized relative to the CAADP pillars and are discussed in depth below.

Weak land management and water control systems must be improved. Liberia possesses abundant land and water resources that can sustain crop area expansion. However, these resources must be harnessed by appropriate policy, legal, and investment environments. Issues regarding property rights linger (e.g., access to land, security of tenure, and the utilization of land), land administration is weak, and a land use policy is absent; there are no proper water resources management and planning; and shifting cultivation, illegal timber harvesting, and other practices that degrade land and water resources are rampant. These and other constraints will render dynamic, sustainable, and inclusive agricultural development difficult even over the medium term.

Limited market access and linkages should be expanded. Markets in Liberia exhibit significant inefficiencies, as well as failures in important aspects. Collaboration between the public and private sectors, including farmers' organizations, is rare, and rural infrastructure to facilitate efficient marketing is mostly nonexistent; in the few instances when the latter is available, it is often in a state of disrepair. Farmers lack appropriate information for prudent decision-making, capacities to invest in best practices in their vocations, and access to formal rural finance to purchase improved seeds and fertilizers, as well as inputs for pest and disease management.

Improving the functioning of agricultural markets for both inputs and outputs is a critical aspect of developing the agricultural economy, driving growth, and reducing poverty. As recognized by CAADP Pillar II, getting markets to work effectively is often the most important challenge for countries like Liberia as they transition from low-production subsistence farming to high-productivity commercial production.

With the limited size of its domestic market, Liberia needs to take advantage of opportunities presented by regional and international markets to achieve significant agricultural growth

and development, but it is not currently doing so in a coherent, planned manner. The country is a member of several regional and continental groups and is also eligible for several preferential trade agreements. To gain maximum benefits from these relationships and agreements, supply side constraints (e.g., low productivity and depleted infrastructure) and institutional incapacities must be addressed. The latter include a weak trade policy, fragmented export promotion responsibilities, poor sanitary and phyto-sanitary services (including no food safety and quality control systems), rudimentary services for trade facilitation and enhancement, and poor coordination to ensure availability of needed transportation, energy, and communication services.

Rudimentary food value chains to ensure consistent supply and reduce hunger need to be commercialized. Ensuring that Liberians have access to the food they need is fraught with entrenched structural and policy challenges; agricultural productivity is low, input and output markets are undeveloped, and public and private institutions are ineffective. A weak incentive environment, lack of access to credit and affordable high quality inputs, and minimal intensification of production are among the factors that have prevented yields from increasing and have constrained income growth.

Existing value chains, particularly those for food crops, fisheries, and livestock, are weak and need to become profitable to generate higher incomes and contribute to capital accumulation and the productive reinvestment required to not only increase food supply but also to foster growth and reduce poverty. A revitalized tree crop sub-sector that provides ample export earnings is needed not only to ensure access to food but also to create jobs and generate incomes and tax revenues. While strategies for responding to food emergencies have been designed, critical components including a buffer stock should be established as a matter of urgency.

Low institutional capacities, including outmoded agricultural research and technology dissemination systems, should be rebuilt and expanded. A major adverse impact of Liberia's protracted conflict was the decimation of national capacity at all levels of governance across the country. Even prior to the prolonged conflict, however, Liberia had begun to experience capacity problems; the conflict simply exacerbated a situation that was already in trouble. At the system-wide level, regulatory frameworks and effective policies capable of guiding and directing national productivity were often non-existent. At the institutional level, mandates and functions overlapped, systems and procedures were compromised, decision-making processes were made dysfunctional, working mechanisms were by-passed, relationships between organizations were strained, organizational culture was undermined, and institutional resources were looted and personalized. On account of poor prioritization, low public sector resources were allocated to productive sectors of the economy. At the individual level, professionals and competent workers either fled the country on account of the conflict or were replaced by supporters of warring factions who were prosecuting the conflicts.

Fortunately, the situation in Liberia has been stabilized and the country has commenced post-conflict renewal. Interim measures to address the serious capacity gaps have been put into place. Prominent among these are the Senior Executive Service program, the Transfer of Knowledge through Expatriate Nationals program, the Scott Family Liberia Fellows Program, the Financial Management Training Program, the Economic Management Capacity Building Program, and the Civil Service Capacity Building Program. To attend to low capacity building issues in a logical, substantive, and coherent manner, the GOL has embarked on a ten-year national capacity building strategy that seeks to alleviate this fundamental national problem. The National Capacity Development Strategy (NCDS) aims to integrate effective approaches to assessing current capabilities, identifying required capacities, and investing in collaborative initiatives to capitalize upon and further develop capacities in a sustainable manner across the core work of all sectors in Liberia. Human capital targets for agriculture through 2015 have been identified as 750 diverse specialists in

the crops sub-sector, 136 in livestock, and 410 in fisheries. By 2020, the number of specialists is targeted to grow to 1,500 for crops, 272 for livestock, and 4,384 for fisheries.

As shown above, the NCDS recognizes that agriculture is a sector that is multi-linked. A successful implementation of the LASIP must therefore prioritize capacity building of the MOA and related sector institutions including cooperatives and other farm-based organizations, agricultural education and training institutions, state-owned agricultural enterprises, civil society organizations, and private sector operators. Particularly, the policy formulation, planning, management, and coordination roles of the MOA, including M&E, should be strengthened; agricultural state-owned enterprises rehabilitated and re-commissioned; national extension services decentralized into a demand-driven, agricultural advisory system to disseminate technological innovations; the capacity to assist farmers of farm-based organizations (FBOs) developed; and the capabilities of agricultural research services, particularly in adaptive research, enhanced. Collaterally, agricultural education and training institutions will need to broaden their offerings to include more specialized courses while concurrently strengthening the quality of their programs. Financial services in rural communities must be improved to facilitate private sector investment in agricultural value chain development, and following appropriate assessment of needs, the capacities of both private sector operators in input and output markets and those of civil society need to be enhanced.

It is particularly worthy to note that many African countries are changing their approaches to agricultural research and technology dissemination to include participatory approaches that combine farmers' indigenous traditional knowledge with the expertise of agricultural research and extension systems. The approach also allows for the active involvement of farmers or users in setting the research and extension agenda, implementing trials including on-farm and farmer/extension led trials, and analyzing findings and results. The trend toward this approach has been influenced by the deepening participation of NGOs and the private sector in agricultural technology development and dissemination.

This change in paradigm should be welcomed by Liberia, whose agricultural research and extension system, formerly dominated by the public sector, is now in ruins. This rebuilding presents an opportunity for the country to adapt to the major paradigm shifts seen in developing countries—including emphases on innovation systems, value chains, research for development, and impact. Some steps that must be taken include clarification of organizational frameworks or institutional mechanisms, defined and well thought-out research and extension programs, and resource mobilization efforts that are prioritized to re-launch and rationalize the national research and extension system as soon as possible.

Recent extension approaches such as agricultural advisory services and farmers' field schools have greatly facilitated producers' involvement, the private sector, and PPPs in other countries, ensuring that technology dissemination is also demand-driven and client-oriented. Therefore, the overriding goal for reviving Liberia's agricultural extension system should be the building of a pluralistic and participatory agricultural advisory and extension service. A national extension strategy must be developed that promotes the participation of private actors in providing services on a competitive, demand-driven basis. The education and health sectors also need to be engaged so that the delivery of their rural services can be coordinated with agriculture.

Vulnerable segments of the population should be protected. As noted earlier, Liberia has made remarkable progress in consolidating peace and security, revitalizing the economy, rehabilitating infrastructure, and restoring social services since the cessation of hostilities and the inauguration of a democratically elected government. Despite this commendable record, successive assessments have confirmed that half of the country's population remains food insecure due to constrained food availability, limited food access, poor food utilization, and a weak enabling environment.

Low agricultural productivity is a major contributing factor to limited food availability, to the extent that Liberia is a net importer of rice, its main staple. Furthermore, access to food is restricted by lack of income-generating opportunities and poor rural infrastructure, resulting in unevenly integrated markets. Food utilization is also poor; trends in child and maternal malnutrition have remained relatively high and constant in recent years, and estimates of the economic losses associated with anemia among the female labor force are enormous. Differences in poverty rates, access to basic services, and food security and nutrition have also contributed to regional disparities and vulnerability among components of the population. Moreover, institutional and governance capacities are inadequate in post-crisis Liberia for sustained hunger reduction in the near term, in the absence of productive and social safety nets, technical assistance, and robust capacity development.

The GOL is cognizant of the fact that food and nutrition insecurity is an obstacle to inclusive and sustainable growth and development. Accordingly, priorities established in the PRS are focused on improved food and nutrition security, enhanced agricultural competitiveness and market linkages, and strengthened human and institutional capacities. The national priorities can be addressed only through a comprehensive social protection program that supports livelihoods, develops human capital, and enhances national and community capacity for hunger reduction.

Such a program would utilize evidence from poverty mapping exercises and seek to improve the capacities of the poorest and most food insecure households to assure sustainable livelihoods and build human capital. Support for livelihoods should focus on: (i) rehabilitating and expanding productive assets and community infrastructure to support increased farm production by food-insecure farmers; and (ii) strengthening and linking smallholder farmer associations, especially women's groups, to improved market outlets for their products by, among other things, encouraging the private sector to invest in agricultural value chains. Human capital development through social protection programming would aim at: (i) improving the nutritional status of pregnant and lactating women and children under five years of age; and (ii) increasing the enrollment and completion of primary and middle school education, particularly by girls, and improving the nutritional status of pupils in food insecure areas. Institutional development to facilitate hunger reduction on a sustainable basis would then strive to: (i) build public sector capacity for school feeding and nutrition program management and food security monitoring and evaluation; (ii) help improve national preparedness for food emergencies; and (iii) strengthen and mobilize food insecure communities to manage livelihood and human capital enhancement initiatives and shocks.

Agricultural transformation must be supported. Seven cross-cutting areas are critical to the effective execution of Liberia's agricultural development strategy:

1. *Public and private sector roles in providing agricultural services should be clarified.* The roles that the public and private sectors play in providing agricultural services need to be clarified as Liberia continues its march from war to peace. Lessons learned from the experiences of countries emerging from conflict demonstrate that government's provision of public goods sets the stage for how actors will behave and invest in the sector. This underscores the importance of continuing government provision of critical functions such as strategic direction setting, coordination, supervision, regulation, and M&E.
2. *Financing of agricultural development should be prioritized.* The creation of a supportive environment for pro-equity growth and private sector-oriented agricultural development means that Liberia's macroeconomic environment must be completely assessed and understood. The most important indicator of this is to correctly gauge volume and patterns of public expenditure for agriculture. Past evidence shows that public spending in agriculture can be highly effective in increasing agricultural productivity and reducing poverty. However, as indicated elsewhere in this paper, public expenditure on agriculture in Liberia has been miniscule and has not promoted growth, thus jeopardizing Liberia's

commitment to the Maputo Declaration in 2003 for domestic agricultural investments and its 10% budget share target.

The CBL is looking for the means with which to set up a financial unit to receive grants, loans, and other financial instruments to further on-lending to commercial banks and financial intermediaries in the agriculture sector. This will assist SMEs and small and medium planters to access agriculture credit that requires medium-term funding.

3. *Openness in international trade relations should be maintained with particular focus on regional trade and integration.* CAAS-Lib and other studies have recommended that the GOL maintain its liberal policy toward food imports and exports but pay careful attention to the effects such a policy has on the incentive system for domestic food production. An independent assessment of the policy's impacts on food, particularly rice production, trade, and price policy, is therefore warranted. Other efforts to improve the competitiveness of domestic products in national and domestic markets must be exerted, including private sector capacity building. With a population of only 3.5 million and a small open economy based on natural resources exploitation, policy makers are cognizant of the limited size of the domestic market and are aware of the opportunities presented not only by international markets but also by regional trade to increase foreign exchange earnings and investment and to reduce poverty. While trade between the country and the United States, Europe, and China is substantial, the volume of trade between Liberia and other Economic Community of West African States (ECOWAS) member countries is negligible. Recorded exports to the region accounted for 5% of total exports in 2009, while imports were just over 10% of total imports over the same period.
4. The GOL realizes the importance of regional trade and integration to long-term growth and poverty reduction, and through the MCI has developed the Framework for a Trade Policy Strategy for Liberia and the companion Liberia National Industrial Policy and Strategy to guide efforts in this direction. The GOL is working to strengthen cooperation with neighboring countries in the Mano River Union and with ECOWAS. ECOWAS is negotiating an Economic Partnership Agreement with the European Union on behalf of its members including Liberia, and the country is well on its way to adopting the Common External Tariff proposed by ECOWAS. However, ensuring that Liberia is prepared to benefit from other dimensions of the ECOWAS custom union framework, such as the ECOWAS Trade Liberalization Scheme, necessitates investing in improving trade policy formulation, negotiations, administration, and facilitation. In so doing, the regulatory regime for trade will be modernized, international best practices employed, predictability and transparency in trade procedures established, new investment attracted, and Liberia's visibility in global value chains and markets elevated. *Gender and youth should be mainstreamed.* The civil crisis accentuated the role of women in Liberian society, especially in food and nutrition security. However, women remain marginalized despite advances on the legislative and public policy front. A strategy to develop agriculture in the country must therefore include women at the center by: (i) supporting women's role as agricultural producers; (ii) improving women's participation in the creation of rural value chains; (iii) promoting women's participation in new economic areas; (iv) strengthening the institutional framework to address gender issues in rural policies and programs; and (v) addressing social barriers that limit the contribution and participation of women.

Youth constitute a majority of the population and a significant proportion of the nation's poor and unemployed. They represent a huge reserve of untapped resources needed to boost agriculture production, enhance food security, and reduce poverty. Unfortunately, many youth shy away from agriculture or are reluctant to engage in farming due to drudgery, lack of support, and unprofitability. Any program that is designed to involve youth in agricultural and national development thus needs to address land ownership, effective systems for information dissemination and training, support to increase production, and improved marketing infrastructure facilities.

5. *A smallholder, pro-equity agenda will foster growth and development.* Reducing poverty in a conflict-sensitive, equitable manner requires that opportunities be created for subsistence farmers to participate in and benefit from diversified farm and non-farm activities. The PRS already provides the overarching architecture for such as pro-equity approach that necessitates a sector environment that is market-driven, socially sensitive, and inclusive of the most vulnerable groups. The GOL and all other stakeholders should demonstrate support for such an approach through increased funding that is targeted to hastening the intensification through innovations and technologies and commercialization of agriculture.

The use of technology and innovation are key to helping Liberian farmers cope with constraints and challenges posed by the environment and the post-conflict situation. Liberian farmers and smallholders face new challenges and diseases (such as the caterpillar infestation in 2009) and new vectors and pests imposed on them in a non-food-secure environment.

6. *The dearth of evidence for planning needs to be remedied.* Difficulties encountered in preparing this investment program and previous reports, such as the CAAS-Lib, highlight the paucity of data for analysis and planning, and the importance of developing the capabilities of the GOL and partners to analyze, monitor, and modify the complex and dynamic interactions between policies and institutional reform, technological change, and human capital development. As experiences in other countries have shown, transforming the agriculture sector and reestablishing commodity value chains is a dynamic process that requires continuous monitoring and revision.

National development strategies also recognize the creation of a socio-economic and demographic database as a priority for improving statistical systems and establishing the empirical underpinnings of policies and program. For example, the PRS calls for robust M&E; analytical inputs are required for evidence-based decision-making that is linked to the design, targeting, and M&E of policies and programs. The MOA is already strengthening its policy development and M&E capacities with the support of a number of development partners, including USAID.

7. *Investment in agriculture should be prioritized.* Fostering sustainable growth in agricultural commodity value chains will require substantial public and private investment to improve their productivity and increase their competitiveness in national, regional, and international markets. Investment mobilized from domestic and external sources needs to be carefully prioritized within the framework of the PRS. Project selection should also consider technical feasibility and sustainability, financial and economic feasibility, absorptive capacity, ease of implementation, and existing projects and plans.

The alignment of Liberia's agricultural development efforts with the CAADP is necessary and achievable if the negative effects of prolonged conflict and policy inattention are reversed. This requires pursuit of a "pro-poor agricultural development strategy" that focuses on improving technologies along the entire value chain, fostering inter-agency coordination and multi-stakeholder consultations, remedying the dearth of evidence for policy formulation and planning, and building other critical aspects of agricultural and related institutions.

1.3 LASIP Development and Consultation Process

The GOL organized a CAADP roundtable discussion with its partners in October 2009; this resulted in the signing of the compact that commits 12 organizations to the implementation of the LASIP programs and sub-programs. The LASIP seeks to transform Liberian agriculture and in so doing maximize the sector's contributions to economic growth, employment and income generation, food and nutrition security, and poverty reduction. To achieve these objectives, LASIP undertook the consultative processes described below.

1.3.1 Engagements and Partnership Development

The CAADP framework under which the LASIP was developed was adopted and subsequently launched in March 2009. Consultations and engagements were held with all the stakeholders including GOL ministries and agencies, private sector actors, farmers, civil society organizations, development partners, New Partnership for Africa Development (NEPAD), ECOWAS, and the African Union (AU). Every stage in the development of LASIP was consultative and validated to encourage and ensure broad participation and the buy-in of all stakeholders.

1.3.2 Evidence-Based Planning and Building Alliance for Investment

The LASIP process documented the challenges and constraints that confront agricultural growth and productivity in Liberia. The review process also outlined opportunities for investment in the agricultural sector. Further evidence-based planning subjected LASIP to an analytical process that guided the following:

- Agricultural growth, poverty reduction and food security, past performance, and prospective outcome;
- Long-term funding for agricultural growth, poverty reduction, and food security; and
- Strategic analyses and knowledge support systems to inform and guide the development of LASIP.

1.3.3 Program Design and Review

LASIP was developed based on all of the preceding processes and on additional inputs from the CAADP Technical Review Panel and domestic stakeholders. Since the roundtable discussion, Compact signing ceremonies, and high-level business meeting in Dakar, LASIP has gone through further analyses and reviews that, together with roundtable and technical review feedback, have strengthened LASIP in areas such as the sequencing of investment priorities (see Section II) and costing of the investment programs (see Section III). Activities associated with these programs will be further prioritized as financing becomes clearer. It should also be noted that the feasibility of LASIP's sub-sectoral growth targets were carefully examined in light of the country's capacity shortcomings, particularly with regard to undeveloped value chains and weak services delivery institutions. However, given anticipated improvement in access to resources, as well as progress being made to build capacity, the GOL plans to reassess the targets during the expected midterm review of the LASIP and within two years of program implementation, if necessary. M&E indicators will also be further refined as activities are defined.

II. LASIP Priority Programs and Sub-Programs

LASIP programs are discussed below in order of priority. Within each program, sub-programs are discussed in order of priority.

2.1 Program 1: Food and Nutrition Security

This component aims to achieve the FSNS goal of ensuring that all Liberians have reliable access to the food they need and are able to utilize that food to live active and healthy lives. This is the country's main priority, and it will be accomplished by increasing smallholder food production. The program will make food accessible to all, including vulnerable segments of the population, and will improve its utilization and systems for coordination and information management. Program 1 necessitates increasing crop yields, providing employment opportunities for food insecure households while contributing to productive to assets creation, increasing food security among young children while promoting early education, taking essential nutrition action particularly on behalf of children under five and pregnant and lactating women, rehabilitating and expanding smallholder tree crops, building the capacity of artisanal fisher folks, restocking small ruminants, and involving women and youth along the crops, fisheries, and livestock value chains. Policy issues related to the achievement of food and nutrition security are identified in Section 4.4. The sub-programs under this broad investment program are as follows:

2.1.1 Sub-Program 1: Food Crops Production and Productivity Enhancement

Target: To make food available and accessible to all Liberians in an effort to move toward achieving the Millennium Development Goal (MDG) of reducing hunger and poverty. Activities will focus on rice, cassava, and vegetables consistent with the Liberia National Rice Development Strategy^{10/} and coordinated within the Mano River Union programs.

Activities:

- (i) Promote policies toward the reduction of distribution of free food and inputs.
- (ii) Start and enhance rice seed production through the private sector.
- (iii) Improve production knowledge and skills, planting materials, and other inputs and expand application of integrated plant nutrients and pest management methods aimed at rice, cassava, corn, and vegetables.
- (iv) Develop and implement a special fertilizer distribution and utilization program for poor farmers.
- (v) Encourage diversification in the production and consumption of food crops such as vegetables.
- (vi) Improve pre- and post-harvest activities to minimize losses and increase yield.
- (vii) Promote value addition activities in the food crop sub-sector.
- (viii) Promote health programs in coordination with the expansion of lowlands.

2.1.2 Sub-Program 2: Improved Nutritional Status and Management of Food Emergencies

Target: To enhance access to food and facilitate improved food utilization particularly for children under five and pregnant and lactating women. These activities will be coordinated with other ministries including Gender, Health, and Education and international institutions such as the World Food Program (WFP) and the United Nations Children's Fund (UNICEF).

^{10/} Ministry of Agriculture. 2009. Liberia National Rice Development. Monrovia, Liberia.

Activities:

- (i) Complete the development and begin implementation of a multi-sector nutrition strategy and program to complement the pro-poor, agricultural transformation by directing direct nutrition-focused interventions.
- (ii) In collaboration with other stakeholders, take steps to improve food utilization and nutritional status by promoting child growth, taking essential nutrition actions, saving acutely undernourished children, addressing the food and nutrition needs of those affected by HIV, and improving nutritional caring practices.
- (iii) In cooperation with other stakeholders and donors, promote the local production and consumption of micronutrient-dense food crops (e.g., fruits and vegetables) and animal products, fortify foods with micronutrients as appropriate, enforce food standards, diversify diets, and increase access to safe water, sanitation, and proper housing.
- (iv) Improve emergency preparedness, response, and contingency plans to ensure household food security during natural and man-made hazards by maintaining national grain reserves and appropriate humanitarian programs, collecting food security information, and conducting regular vulnerability analyses.
- (v) Support the very poor with productive safety nets such as food- or cash-for-work, vouchers and school feeding.

2.1.3 Sub-Program 3: Smallholder Tree Crops and Agro-forestry Development

Target: Increase smallholder participation in the tree crop and agroforestry sub-sectors by 50% between 2011 and 2015 in order to enhance the income of the rural population and facilitate the sustainability of natural resources.

Activities:

- (i) Revitalize and expand seed gardens to provide improved planting materials aimed at palm oil and cocoa for smallholders.
- (ii) Rehabilitate and replant existing smallholder farms.
- (iii) Rehabilitate and expand appropriate post-harvest technologies to meet smallholder needs.
- (iv) Develop out-grower (smallholder) tree crops programs in cooperation with agricultural concessions and other partners.
- (v) Promote agroforestry.
- (vi) Privatize the marketing system for tree crop and agroforestry products.

2.1.4 Sub-Program 4: Fisheries Development

Target: To increase fisheries contribution to food and nutrition security and the GDP with specific attention to scaling up interventions that are rebuilding the capacity of the Bureau of National Fisheries.

Activities:

- (i) Improve operational capacity of the Bureau of National Fisheries.
- (ii) Institute good governance and sustainable management of fisheries.
- (iii) Reduce illegal, unreported, and unregulated fishing.
- (iv) Increase the contribution of fisheries to the economy.

2.1.5 Sub-Program 5: Livestock Development and Promotion

Target: To expand domestic livestock production to satisfy 50% or more of domestic demand and enable activities in re-stocking and animal health to become operational.

Activities:

- (i) Rebuild veterinary services, including quarantine areas at borders crossings.
- (ii) Improve the institutional environment and infrastructure for livestock, and strengthen zoo sanitary standards.
- (iii) Strengthen coordination between the MOA and other agencies (such as the Ministry of Health and Social Welfare [MOHSW] and the MCI) to better regulate and expand trade in livestock products.
- (iv) Review and upgrade existing legislation and regulations pertaining to veterinary services and sanitation.
- (v) Preserve, improve, and exploit common pastoral property resources of the country.
- (vi) Expand existing programs to re-stock the national herd, with a focus on small ruminants.
- (vii) Initiate micro-projects to pilot animal production centers in selected villages.

2.1.6 Sub-Program 6: Special Women and Youth Initiative

Target: To empower women as agricultural producers and value chain creators and increase youth involvement in agricultural-related activities.

Activities:

- (i) Support women's role as agricultural producers and participants in the creation of rural value chains.
- (ii) Promote women's participation in new economic areas.
- (iii) Strengthen the institutional framework to address gender issues in rural policies and programs and remove social barriers that limit the contribution and participation of women.
- (iv) Develop and implement an integrated youth in agriculture program that includes sensitization about opportunities in the sector, provides skills-based training, and supports accessibility to input and output markets.
- (v) Promote effective participation of youth, particularly graduates of programs such as Centre Songhai and the Sinoe and Tumutu Agricultural Training Programs, in out-grower or smallholder schemes and similar undertakings.

2.2 Program 2: Competitive Value Chains and Market Linkages

Accessing and getting markets to work effectively is an important challenge for countries like Liberia that must transition from low-production subsistence farming to high-productivity commercial enterprises amid poor infrastructure and absence of an agribusiness culture. This component therefore seeks to improve market access through increased investment in rural roads, marketing infrastructure such as physical marketplaces, storage and processing facilities for crops, livestock and fisheries, and energy. Labor-saving transitional devices and technologies will be provided to increase productivity and reduce drudgery. Financial services will be improved and made accessible and affordable. Knowledge and skills of producers and other rural dwellers will be improved for effective linkage to domestic, regional, and international markets through favorable policies and programs. An assessment of approaches to increasing the participation of the private sector in the development of agricultural value chains will need to be undertaken at each sub-program and activity level

with appropriate consideration given to differences in the sizes and types of enterprises. Several policy issues that, if not resolved, could hinder the desired increase in competitiveness have been identified in Section 4.4.

2.2.1 Sub-Program 1: Rehabilitation and Expansion of Rural Roads

Target: To rehabilitate, upgrade, and maintain at least 1,200 km of rural roads (300 km/year) between 2011 and 2015 in the five main food producing counties of the country.

Activities:

- (i) Assess strategic rural roads linking major production areas to markets.
- (ii) Formulate a policy on construction, rehabilitation, and maintenance of rural roads.
- (iii) Construct and rehabilitate strategic rural roads into all-weather roads.
- (iv) Improve coordination between the MOA, the Ministry of Public Works (MOPW), county governments, and implementing agencies to prioritize and maintain rural roads.

2.2.2 Sub-Program 2: Rural Agricultural Infrastructure and Technology

Target: To improve market accessibility of agricultural products through the construction and operation of rural agricultural infrastructure such as modern marketplaces, storage and processing facilities, and development of renewable energy resources; and to enhance productivity and expand acreage through mechanization by formulating a targeted mechanization strategy that encourages and supports individual farmers, FBOs, and other private sector entities in the acquisition and utilization of technologies throughout the value chain.

Activities:

- (i) Rehabilitate and construct a minimum of four permanent, modern market structures in each district.
- (ii) Support the private sector in establishing a slaughterhouse and cold chain facility in each county.
- (iii) Facilitate the provision of storage and processing facilities for staples such as rice, cassava, and tree crops (including oil palm, cocoa, and coffee) in each district,
- (iv) Support the development and utilization of a renewable energy source in each county within five years.
- (v) Establish an Agricultural Engineering Unit (mechanical and civil) at the MOA to support PPPs in the provision of mechanization, and assess rural labor markets to determine challenges and opportunities for labor-saving and processing technologies.
- (vi) Disseminate information on improved technologies to small farmers.
- (vii) Make labor-saving intermediate technologies and devices available to eligible farmers and FBOs.

Rural infrastructure will expand and deepen the use of technologies for change in the rural sector. In selected areas, rural electricity will allow farmers to enhance their efficiency by allowing them to use productive equipment and innovations.

2.2.3 Sub-Program 3: Market and Enterprise Development

Target: To rebuild and commercialize value chains using various approaches including out-grower schemes that link commercial entities and smallholders in an effort to increase agricultural productivity and farmer income.

Activities:

- (i) Strengthen FBOs to access services, credit, improved storage, and processing facilities and markets.
- (ii) Develop agribusinesses along commodity chains to facilitate value addition, and link farmers to input and output markets.
- (iii) Develop and improve knowledge of market information systems and quality control measures and standards.
- (iv) Develop, train, and adopt productivity enhancement technologies including propagation and use of high-quality seeds, seedlings, and fingerlings.

2.2.4 Sub-Program 4: Rural Financial Services

Target: To increase the share of total commercial bank credit allocated to the agriculture sector from 5.0% to at least 15.0%, and expand the accessibility of farmers and FBOs to formal rural financial services in five years.

Activities:

- (i) Develop appropriate institutional arrangements to extend credit to the rural sector, particularly agriculture.
- (ii) Create awareness among farmers and farming groups of rural financial schemes.
- (iii) Establish credit guarantee schemes and other appropriate financial instruments for producers and FBOs.

2.3 Program 3: Institutional Development

Public support for the agriculture sector has long been recognized as ineffective, and previous technical reviews have made recommendations to reform the MOA and related agencies. Low institutional capacities have in turn made it difficult for these organizations to perform core responsibilities of policy development, regulation, and provision of essential services. This component will develop enduring capacities in the public sector for evidence-based policy formulation, planning, coordination, and supervision, together with the implementation of programs and projects. Key services such as research and extension will be developed in a participatory manner and supplied on a demand-driven basis. Agricultural education and training will be emphasized and funded at all levels to ensure that skills and knowledge needed to sustain agricultural growth and development are available. FBOs will also be promoted and strengthened to facilitate the mobilization of resources needed by individual producers.

Two studies have been completed to assess personnel and institutional capacity requirements for the agriculture sector. The USAID-funded Technical Assistance Support for Ministry of Agriculture (TASMOA) completed a report that assessed the roles and responsibilities of the agriculture sector in general and determined core functions of the MOA and non-core functions of other various stakeholders. A formal establishment chart is currently being vetted to determine staffing requirements among various departments within the MOA. A National Capacity Development (NCD) initiative, through the Ministry of Planning and Economic Affairs (MOPEA), seeks to determine capacity needs across all sectors including agriculture skills within the private sector. Results of these initiatives will be compiled and reviewed to determine if further capacity requirement analysis is needed for successful implementation of all agriculture sector programs (public, private) in the LASIP. Key policy issues impacting institutional development are discussed in Section 4.4.

The components under this broad investment sub-program are as follows:

2.3.1 Sub-Program 1: Rebuilding the Ministry of Agriculture and Improved Coordination and Management

Target: To rebuild and decentralize the MOA's activities to cover the whole country within five years and improve coordination and management to enhance sector growth and development.

Activities:

- (i) Clarify roles, responsibilities, and relationships of the MOA and with other key ministries and agencies.
- (ii) Provide staff training in evidence-based policy development and analysis, M&E, information and statistical data collection and dissemination, agricultural risk and vulnerability management, and program development and coordination.
- (iii) Strengthen human resources, transparency, and accountability systems and logistical support for the Program Management Unit (PMU).
- (iv) Establish appropriate monitoring, evaluation, and reporting systems.
- (v) Develop policies and strategies to enable coordination of land and water development, food and nutrition security, competitive value chains and market linkages, and institutional development in the sector.
- (vi) Provide education and training in specialized fields of agriculture and rural development to staff of the ministry and parastatals.

2.3.2 Sub-Program 2: Reviewing and Upgrading Selected Agricultural Parastatals

Target: To reform state-owned agricultural enterprises and corporations with a view to improve efficiency and effectiveness consistent with best practices.

Activities:

- (i) Review statutes and other legal arrangements establishing agricultural parastatals.
- (ii) Undertake appropriate consultations with stakeholders including the GOL, development partners, farmers, civil society, and the private sector.
- (iii) Identify best national and international practices.
- (iv) Redefine the roles of agricultural parastatals and develop appropriate legislation and institutional arrangements.
- (v) Restructure parastatals and take other actions to ensure implementation of new roles and functions.

2.3.3 Sub-Program 3: Building Extension and Enhancing Technologies

Target: To build capacity and transform the national extension service into a decentralized, demand-driven farm advisory system in three years.

Activities:

- (i) Rebuild and expand the capacity of the national extension service, promoting private-sector engagement in extension service delivery.
- (ii) Promulgate an agricultural technology dissemination and adoption policy in line with regional best practices.
- (iii) Provide support for participatory and pluralistic extension approaches and gender mainstreaming.
- (iv) Develop an enabling agricultural communication strategy and support the modernization of associated systems to increase the availability and accessibility of information and communications technologies in rural areas.

- (v) Rebuild selected FBOs.
- (vi) Strengthen the CDA.

2.3.4 Sub-Program 4: Capacity Building of Farm-based Organizations

Target: To build the capacity of at least 10 RBOs in each county and strengthen the CDA.

Activities:

- (i) Undertake a comprehensive assessment of the performance of FBOs to date.
- (ii) Formulate appropriate strategies and institutional arrangements.
- (iii) Rebuild selected farm-based community organizations.
- (iv) Strengthen the CDA and other apex organizations.

2.3.5 Sub-Program 5: Revitalizing Agricultural Research

Target: To rebuild CARI and implement a participatory, demand-driven agricultural research paradigm in 10 years.

Activities:

- (i) Arrive at a consensus on the strategic vision for a rebuilt agricultural research service.
- (ii) Rebuild the infrastructure at CARI and put into place the necessary security measures for the proper safeguard of properties.
- (iii) Establish appropriate legal and governance framework to provide efficiency and flexibility in managing human, physical, and human resources, and to ensure accountability to client, funders, and other stakeholders.
- (iv) Develop linkages with other internal and external research providers, clients, technology transfer agencies, and developmental organizations including working in collaboration with regional level organizations.
- (v) Formulate a national agricultural research strategy to guide research activities, including adaptive research.
- (vi) Implement phases I, II, and III of the CARI rehabilitation strategy.

2.3.6 Sub-Program 6: Renewing Agricultural Education and Training

Target: To improve access and quality of agricultural education and training.

Activities:

- (i) Assess the agriculture education and training system.
- (ii) Upgrade the present agriculture higher education system within 10 years.
- (iii) Support universities and colleges to initiate graduate training and broaden undergraduate education in agricultural disciplines such as fisheries, animal husbandry, and post-harvest technology.
- (iv) Improve technical/vocational skills training and replicate special training programs.
- (v) Promote business and career opportunities in agriculture through special awareness and continuous learning programs.
- (vi) Incorporate agriculture in the curricula of postsecondary institutions.
- (vii) Provide scholarships and other forms of assistance for agricultural students at the undergraduate and graduate levels.

2.4 Program 4: Land and Water Development

The objective of this component is to ensure that the country's endowment of land and water is used to accelerate food production and facilitate income generation through proper planning, development, and management. To achieve this objective, focus will be placed on ensuring that farmers have access to land and secured tenure, and are able to utilize this resource in a sustainable way. Better land husbandry initiatives such as increased fertilizer use will be promoted to foster and sustain soil fertility, area under irrigation will be expanded particularly through on-farm and small-scale irrigation and drainage development schemes, wetlands management will be improved, and degraded land will be rehabilitated and brought into productive use. Key policy actions that must be taken to facilitate maximum contribution of land resources to agricultural growth and development are identified in Section 4.4.

2.4.1 Sub-Program 1: Land Reform and Capacity Building

Target: Consistent with reforms emanating from deliberations of the Land Commission, to ensure that statutes and policies regarding land access and use and tenure security are reviewed to facilitate the availability of land for sustainable crop area expansion and for investment in agriculture.

Activities:

- (i) Revise and adopt laws regarding property rights including access to land, security of tenure, and utilization of land.
- (ii) Strengthen land administration to facilitate improved land management and to promote private sector involvement in agriculture.
- (iii) Resolve pervasive land conflicts.

2.4.2 Sub-Program 3: Expansion of Irrigable Land

Target: To increase the share of arable land under irrigation from less than 2% to 5%.

Activities:

- (i) Conduct a nationwide inventory of viable inland valley swamps.
- (ii) Develop a strategic irrigation investment plan.
- (iii) Construct and promote diverse irrigation systems, including small-scale schemes utilizing water collection techniques, to support sustainable production.
- (iv) Reconstitute the Technical Services Department of the MOA to facilitate rebuilding of water and land management infrastructure.

2.4.3 Sub-Program 2: Enhanced Land Husbandry

Target: To improve and maintain soil fertility and to promote complementary utilization of organic, mineral, and physical components of soil management in support of agricultural intensification.

Activities:

- (i) Conduct land evaluation and suitability assessments to determine the location- and farm-specificity of crops considering physiological requirements.
- (ii) Establish a national agricultural land resource database to facilitate information exchange.
- (iii) Increase the total area protected against soil degradation through diverse schemes including agroforestry.

2.4.4. Sub-Program 4: Improved Wet and Degraded Land Management

Target: To sustainably develop and increase the total area of wet and degraded land for year-round utilization to produce food crops, particularly rice and vegetables.

Activities:

- (i) Develop and implement guidelines, including mandatory environmental impact assessments, for the adoption of environmentally friendly practices for wet land cultivation.
- (ii) Increasingly promote community participation and encourage the private sector to invest in the development and management of wet and degradable lands.
- (iii) Increase public sector investment in wet and degraded land development.

If land policy reform and associated capacity building activities are carried out, enhanced land husbandry practices implemented, irrigable lands expanded, health related issues addressed (e.g., schistosomiasis), and improved wet and degraded land management activities implemented, there would be increased access to land and water resources for sustainable crop area expansion and production, increased involvement of private sector in agriculture, improved land resource information available to potential and local agricultural investors, increased hectares of irrigable land put under irrigation and small-scale schemes, and increased economic use of wetlands. This would result in increased agricultural production and subsequently, increased food and nutrition security, increased employment, and reduced poverty.

2.5 Cross-Cutting Issues

It is evident that policies external to the sector are often as influential in determining performance as are sector-specific interventions. These external policies and strategies determine investment flows, market access, inputs quality and accessibility, and the overall environment in which sector growth and development is pursued.

LASIP recognizes the importance of these cross-cutting, external factors. It is particularly cognizant of the enabling roles of gender and youth mainstreaming, and natural resource management issues (especially those dealing with land and water).

2.5.1 Gender and Youth

In Liberia, women in rural areas produce most of the food and are largely responsible for household food security; they fetch wood and water, care for children and homes, and undertake transport and marketing activities of the family. They predominate in key segments of the value chains of major food and cash crops, especially in production, primary processing, product development, and marketing. Some women also serve as heads of their families and shoulder the corresponding responsibility. The civil crisis has accentuated the role of women in Liberian society, especially in food and nutrition security. The number of female-headed households and single-parent families has increased, as have the burdens of child and family care. However, women are often highly marginalized and need to be empowered to be able to improve on their roles and responsibilities in the sector.

LASIP, cognizant of these factors, seeks to address the following key gender issues that might serve as a disincentive to investment in agriculture:

- Strengthen the institutional framework and capacities, particularly in the MOA and Ministry of Gender and Development (MOGD), to address gender issues in rural policies and programs;
- Collaborate with the MOGD and development partners to develop and implement a Rural Women Empowerment Program to enhance women's decision-making powers and access to credit, land, extension, technology and market information;

- Ensure gender issues are mainstreamed in all agriculture policy formulation, planning, programming, and proposed interventions at national and sub-national levels;
- Intensify research and adapting programs for agricultural technologies that increase women labor productivity without undue physical exhaustion; and
- Support women's participation in promotion of and training in agribusiness services.

Youth constitute more than 65% of the population and a significant proportion of the nation's poor and unemployed. They represent a huge reserve of untapped labor resource needed to boost agriculture production, enhance food security, and create massive wealth. Unfortunately, many youth shy away from agriculture or are reluctant to engage in farming. Many have abandoned rural communities and farmlands for Monrovia and other urban centers in the elusive search for quick incomes and better livelihoods.

LASIP, cognizant of these factors, seeks to address the following key youth issues that might serve as a disincentive to investment in agriculture:

- Support the National Youth Policy and Agenda;
- Develop and implement a Youth In Agriculture Program in which provisions are made for sensitization of opportunities in the sector, training, and enhanced access to inputs, credit, land, and technologies;
- Facilitate and support the private sector to establish agro-industries in rural areas that will provide supplementary or alternative employment for youth;
- Establish and implement special initiatives directed at increasing youth interest such as Centre Songhai Liberia; and
- Enable young people to participate in revitalization of value chains in the food and agriculture sector.

2.5.2 Environmental Protection

Environmental conservation and preservation are now national and global priorities that have raised the urgency to integrate agriculturally sound and environmentally sustainable farming practices. There is a need to provide ample safeguards against land degradation while guaranteeing food production on a sustainable basis and a heritage for future generations.

Additionally, Liberia is likely to be disproportionately affected by the impact of climate change due to limited adaptive capacity and widespread poverty. Global warming is considered to be accompanied by a rise in sea levels. About 95 km² of land in the coastal zone of Liberia will be inundated as a result of one meter sea level rise. The country as a whole lacks the capacity to adapt to climate change, such as access to resources, strong social and human capital, and regular access to risk-spreading mechanisms. The majority of the people are, therefore, highly vulnerable to the results of climate changes.

Taking all these environmental and climate related issues into consideration, the investment plans proposed in LASIP include the following key issues:

- Support the development of environmental legislations and guidelines for agricultural practices and establish appropriate measures for country-wide sensitization, awareness, and enforcement of the policy instruments;
- Create awareness, implement plans, and enforce national legislation for environmental protection and conservation from agricultural practices;
- Support and promote actions for establishment of forests for protection of watersheds and wetlands, combating of desertification, and conservation of biological diversity to contribute to the stabilization of global climate;
- Support measures to subject all sector policies and plans to strategic environmental assessments and projects to environmental impact assessments;

- Implement programs to conserve soil and water resources and for conservation farming;
- Support and promote sustainable agricultural production such as conservation agriculture, and rural development activities that reduce vulnerability of cropping systems;
- Provide information and advice through statistical data and information and the mass media about climate change, causes and risks, and available adaptation strategies, especially in relation to the agriculture sector;
- Promote proven best practices, policies, and measures that encourage forest protection, sustainable farming, and sustainable energy utilization;
- Support the institutionalization of adaptation capacities through partnerships with NGOs, civil societies, the private sector, and concerned government organizations; and
- Support climate change-related research, education, and training.

It should be stressed that LASIP actions will be implemented subsequent to careful consideration of both the potential positive and negative climate change effects that they could produce. Therefore, baseline assessments of the likely climate change impacts of current and proposed activities will be undertaken as a precursor to the start of new programs. While it is understood that data to make such determinations is in many cases lacking in Liberia, there is a need to work with existing information, as well as identifying the data gaps that exist. Collaboration with partners to begin to address gaps and to provide feedback to continually increase the understanding of climate change effects in agricultural systems is needed. Support will be sought from development partners such as the USAID to conduct a phased baseline Climate Change Vulnerability Assessment and to ensure that climate change issues are incorporated in all donor-funded agricultural programs and projects in a bid to identify and mitigate negative effects of climate change.

LASIP interventions will be undertaken within the framework of the National Environmental Policy of Liberia, the Environmental Protection Agency Act, and the Environmental Protection and Management Law. More importantly, these actions will further the objectives of the National Adaptation Program of Action (NAPA), which seeks, at the policy level, to reduce the adverse effects of climate change by building capacity to integrate climate change in development planning, designing infrastructure, land and coastal zone management planning and institutions, raising awareness, and mainstreaming adaptation to climate change into policies and programs. At the project level, NAPA is focused on reducing the vulnerability of local communities by promoting integrated cropping and livestock farming, improving monitoring of climate change, and enhancing coastal defense systems to reduce incidents of flood, erosion, and siltation in selected areas of the country.

III. Financing the LASIP

3.1 Public Financing of Agriculture

During the Second Ordinary Session of the African Union, held in Maputo in July 2003, the heads of state and Government pledged to "...allocate 10% of national budgetary resources for the implementation of CAADP..." Liberia is aware of the commitment it made in Maputo, but it was unable to start its implementation as the country was in the middle of a prolonged social crisis caused by the civil war. Following the establishment of the new government, however, initial steps were taken immediately and continue, as demonstrated by the preparation of the NMTIP and now LASIP.

The implementation of LASIP requires significant financial commitment from both the public and private sectors. Between 2003 and 2005, the share of the national budget allocated to the MOA and other agricultural institutions hardly reached 1%. The low budgetary share is also confirmed by a review of allocations since then. Nonetheless, from FY 2005/2006 to the present, public spending on agriculture has steadily increased.

In FY 2005/2006, the total national budget was US\$80 million; the MOA was allocated US\$0.74 million, or slightly less than 1% of the total. In the 2006/2007, 2007/2008, and 2008/2009 fiscal years, the MOA was allocated US\$3.1 million, US\$3.8 million, and US\$7.0 million (see Table 2), representing budget shares of 2.0%, 1.8%, and 2.3%, respectively.

Table 2: MOA Budget Execution

	FY 2005/2006	FY 2006/2007	FY 2007/2008	FY 2008/2009	FY 2009/2010*
MOA budget (US\$)	0.74 million	3.1 million	3.8 million	7 million	8 million*
% of national budget	<1%	2%	1.8%	2.3%	2.5%*
MOA budget execution	100%	100%	100%	100%	
* Provisional data. Source: MOA Controller's Office.					

The level of funding provided to the sector by the current administration is low but growing; however, it has been insufficient to cover the MOA's annual recurrent expenditures.

For the past four years, government adherence to the budget allocated to the MOA has been 100%, which demonstrates strong commitment to agriculture sector investment. The MOA is saving on recurrent expenditures, mainly personnel and related services, to purchase and equip its field staff; distribute inputs such as rice seeds, fertilizers, and agricultural chemicals; multiply and distribute high yielding planting materials; and construct technology centers. The MOA is also providing post-harvest support for storage and processing of farm produced as well as rebuilding the capacity of its research and extension services.

The GOL is committed to agriculture development and is working hard to revitalize agriculture as the bedrock of the economy, as agriculture provides livelihoods for the majority of Liberians. The commitment of the government is clearly articulated in the Lift Liberia PRS, under Pillar II, Economic Revitalization, subsection on food and agriculture. The Government believes that a vibrant agricultural sector is central to reducing poverty, providing food security, and ensuring progress toward the Millennium Development Goals.

The historical tabulation of the contribution of the national budget to the agricultural sector, however, has been grossly understated as only the budget of the MOA has been accounted for as contribution to the agricultural sector. Actually, the GOL's contribution to the agricultural sector has been significantly higher. For example, in the draft budget for FY

2010/2011, total appropriation to the MOA is 2.2% of the national budget. But this excludes a very important component of Government's contribution in the provision of feeder or farm-to-market roads. In addition, part of the budgetary appropriation for capacity building in the agricultural sector is also disaggregated in the budget in entities not directly under the MOA, such as the Youth Agricultural Training Center, the Agriculture and Industrial Training Bureau, and the Booker Washington Institute. Appropriations to the Liberia Produce Marketing Corporation and the Cooperative Development Agency, as well as communal farming programs in various counties and the construction/repair of country feeder roads under the MOA are also not included. There are agricultural sector-related appropriations in the budgets of the MOPEA (sectoral planning budget), Ministry of Education (curriculum budget), MOHSW (nutrition budget), and the MOGD (women's economic empowerment).

A significant portion of the MOPW's project budget of US\$17.7 million is to be appropriated for building and rehabilitation of feeder roads. In addition, portions of the MOPW's US\$11 million core budget under its Construction Services Program, Highway Maintenance Program, and Rural Development and Community Service program (totaling in excess of US\$2 million) will be used for construction of feeder roads and bailey bridges; these will directly impact the agricultural sector. Other ministries and agencies known to have agricultural related components in their budgets are the Environmental Protection Agency, LRDA, Forestry Development Authority, Land Commission, and the Ministry of Labor. Also, the GOL allocates funds to the University of Liberia and the Cuttington University, a portion of which is directed at agricultural related programs.

Aggregating all of the expenditures related to the agricultural sector produces more than US\$8.9 million dollars. When added to the MOA budget figure, this amount better reflects contribution to the agricultural sector—4.8% of the FY 2010/2011 national budget. The MOA shall recommend to the MOF that attempts be made in future national budgets to aggregate all contributions to the agricultural sector, in order to enable a better appreciation of the government's aggregate appropriation for agriculture.

It is not possible to state specifically when the GOL anticipates that it could meet the Maputo Principle of 10% contribution of the national budget to the LASIP. Projections further than five years are best guesses. However, given the projected increases in GOL revenue due to improved economic performance resulting from intensive direct foreign investments in various sectors of the economy; having reached the HIPC completion point and eligibility to access loans and other forms of financing, coupled with better budget tracking in the future for agriculture sector allotments; and using a trend analysis of the growth in aggregate contribution to the agricultural sector over the last five years (i.e., not only the MOA budget), a best guess estimate is that total appropriation of the national budget may reach 10% within five to six years. This projection is supported by the government's own pronouncements of its unequivocal support for and commitment to the growth of the agriculture sector in general, and meeting the Maputo Declaration in particular.

3.2 Implementation Costs

3.2.1 Overview

LASIP is to be an incrementally funded investment program, and as such, it is to be funded and implemented step-by-step. A summary of the LASIP public sector sub-program is presented in Table 3. Table data is presented in the following columns:

- **Column (1): Total Cost of LASIP:** The total amount of funding needed to finance LASIP.
- **Column (2) Already Funded:** Programs and projects that are funded and are operational as of early 2010^{11/};
- **Column (3): Funding Gap:** The difference between Total Cost of LASIP and Already Funded, representing the additional investment needed.

Estimation for LASIP's implementation costs was derived from the collation of costs from project proposals and studies, including adjustment of cost inputs from all of the MOA agencies and from other stakeholders in the agriculture sector. These costs include investment and operational costs such as personal emoluments and administration of the implementing agencies. The GOL recognizes that donors are planning additional investments over the period of the LASIP—some of which will be substantial—that will reduce the Funding Gap.

^{11/} The Already Funded programs and projects include those that have funding and are under implementation but that may end before the end of the 2011–2015 period.

Table 3: Summary of the LASIP Programs (2011–2015)
(US\$ Millions)

	TOTAL COST OF LASIP (1)	ALREADY FUNDED (2)	FUNDING GAP (3)	YEAR 1	YEAR 2	YEAR 3	YEAR 4	YEAR 5
Program 1: Food and Nutrition Security								
Sub-Program 1. Food Crops Production and Productivity Enhancement	212	54	158	15.8	31.5	47.7	31.5	31.5
Sub-Program 2. Improved Nutritional Status and Management of Food Emergencies	115	25.5	89.5	8.95	17.9	26.85	17.9	17.9
Sub-Program 3. Smallholder Tree Crops and Agro-forestry Development	51.8	18.2	33.6	3.36	6.72	10.08	6.72	6.72
Sub-Program 4. Fisheries Development	22	12	10	1	2	3	2	2
Sub-Program 5. Livestock Development and Promotion	11.1	1.1	10	1	2	3	2	2
Sub-Program 6. Special Women and Youth Initiative	10	3	7	0.7	1.4	2.1	1.4	1.4
SUBTOTAL	421.9	113.8	308.1	30.81	61.52	92.73	61.52	61.52
Program 2: Competitive Value Chains and Market Linkages								
Sub-Program 1. Rehabilitation and Expansion of Rural Roads	170.65	20.15	150.5	30.1	30.1	30.1	30.1	30.1
Sub-Program 2. Rural Agriculture Infrastructure and Labor-Saving Technologies	74.47	22.97	51.5	10.3	10.3	10.3	10.3	10.3
Sub-Program 3. Market and Enterprise Development	18.61	8.61	10	2	2	2	2	2
Sub-Program 4. Rural Finance Services	40	0	40	8	8	8	8	8
SUBTOTAL	303.73	51.73	252	50.4	50.4	50.4	50.4	50.4
Program 3: Institutional Development								
Sub-Program 1. Rebuilding the MOA and Improved Coordination and Management	23.4	6.9	16.5	3.3	4.95	4.12	2.48	1.65
Sub-Program 2. Reviewing and Upgrading Selected Parastatals	6	0	6	1.2	1.8	1.5	0.9	0.6
Sub-Program 3. Building Extension and Enhancing Technologies	14.5	0	14.5	2.9	4.35	3.62	2.18	1.45
Sub-Program 4. Capacity Building of Farm-based Organizations	3	0	3	0.6	0.9	0.75	0.45	0.3
Sub-Program 5. Revitalizing Agriculture Research	40	0	40	8	12	10	6	4
Sub-Program 6. Renewing Agriculture Education and Training	31.5	0	31.5	6.3	9.45	7.88	4.72	3.15

	TOTAL COST OF LASIP (1)	ALREADY FUNDED (2)	FUNDING GAP (3)	YEAR 1	YEAR 2	YEAR 3	YEAR 4	YEAR 5
SUBTOTAL	118.4	6.9	111.5	22.3	33.45	27.87	16.73	11.15
Program 4: Land and Water Development								
Sub-Program 1: Land Reform and Capacity Building	12	3	9	1.8	2.7	2.7	0.9	0.9
Sub-Program 2 : Enhanced Land Husbandry	37.2	0	37.2	7.44	11.16	11.16	3.72	3.72
Sub-Program 3: Expansion of Irrigable Land	11.5	0	11.5	2.3	2.3	2.3	2.3	2.3
Sub-Program 4: Improved Wet and Degraded Land Management	43	0	43	8.6	12.9	8.6	8.6	4.3
SUBTOTAL	103.7	3	100.7	20.14	29.06	24.76	15.52	11.22
TOTAL	947.7	175.43	772.3	123.65	174.43	195.76	144.17	134.29

3.2.2 Sources and Uses of Funds

Below are sources and uses charts (Table 4 and Table 5) that outline: (a) the projected contribution from the national budget and by development partners (sources) over the five-year period; and (b) a summary breakdown by sub-program over the five-year period and a more detailed uses breakdown by component. A detailed breakdown to the level of unit costs at the activity level will be done as financing sources become clearer.

Table 4: Financial Sources for the LASIP
(US\$ Millions)

			YEAR 1	YEAR 2	YEAR 3	YEAR 4	YEAR 5	TOTAL
1	Program 1: Food and Nutrition Security	National Budget*	0.9	1.92	3.1	2.91	2.8	11.6
		Development Partner**	29.91	59.7	89.73	58.71	58.82	296.5
		Subtotal	30.81	61.62	92.83	61.62	61.62	308.5
2	Program 2: Competitive Value Chains and Linkages	National Budget*	0.5	0.6	0.6	0.6	0.6	2.9
		Development Partner**	49.9	49.8	49.8	49.8	49.8	249.1
		Subtotal	50.4	50.4	50.4	50.4	50.4	252
3	Program 3: Institutional Development	National Budget*	2.03	3.04	2.54	2.49	1.65	11.75
		Development Partner**	20.27	30.41	25.35	14.25	9.5	99.78
		Subtotal	22.3	33.45	27.89	16.74	11.15	111.5
4	Program 4: Land and Water Development	National Budget*	0.71	1.09	0.92	0.55	0.37	3.64
		Development Partner**	19.43	27.97	23.84	14.97	10.85	97.06
		Private Sector***						
		Subtotal	20.14	29.06	24.76	15.52	11.22	100.7
		TOTAL	123.7	174.5	195.9	144.3	134.4	772.3

Detailed breakdown of cost by component hinges on the identification of specific activities; the latter will be prioritized and sequenced as financing of LASIP becomes clearer. Consequently, such data will be provided at a later date. Furthermore, the contribution of the private sector is not included; however, selected projects implemented by the public sector do include a component on private sector capacity building.

Attempts to project the actual level of participation by the various actors are challenging, especially as some donors/development partners do not always share their budgets with the MOA. This makes it difficult to insert details on investment projects, as many of the investment projects in the agriculture sector are primarily funded by donors. However, the contribution of each actor will be monitored through the MOPEA's work in the M&E phase of the plan.

3.2.3 Recurrent and Capital Expenditures

Table 5 presents the projected breakdown of the new expenditure under LASIP by recurrent expenditure and capital expenditure. For international organizations such as the AfDB or the World Bank, the recurrent budget required from receivers (MOA, in kind) is usually 3%, while for bilateral donors; the in-kind requirement is 1% to cover the cost of the investment. To implement the LASIP, the recurrent budget for the MOA will require US\$17 million for five years—a yearly shortfall of >US\$3 million, or 50% more than its present direct budgetary allocation (US\$7 million).

Table 5: LASIP Recurrent and Investment Costs by Program

	SOURCE	YEAR 1	YEAR 2	YEAR 3	YEAR 4	YEAR 5	TOTAL
Program 1: Food and Nutrition Security							
Total	Recurrent	0.644	1.288	1.944	1.288	1.288	6.453
	Investment	30.17	60.33	90.89	60.33	60.33	302
	Subtotal	30.81	61.62	92.83	61.62	61.62	308.5
Program 2: Competitive Value Chains and Linkages							
Total	Recurrent	0.805	0.805	0.805	0.805	0.805	4.025
	Investment	49.6	49.6	49.6	49.6	49.6	248
	Subtotal	50.4	50.4	50.4	50.4	50.4	252
Program 3: Institutional Development							
Total	Recurrent	0.669	1.004	0.836	0.502	0.335	3.345
	Investment	21.63	32.45	27.04	16.22	10.82	108.2
	Subtotal	22.3	33.45	27.88	16.73	11.15	111.5
Program 4: Land and Water Development							
Total	Recurrent	0.604	0.872	0.743	0.466	0.337	3.021
	Investment	19.54	28.19	24.02	15.05	10.88	97.68
	Subtotal	20.14	29.06	24.76	15.52	11.22	100.7

3.2.4 Cost Benefit Analysis

To select and prioritize LASIP programs, the MOA follows specific steps: 1) conduct a SWOT (strength, weakness, opportunity, threat) analysis for value chain; and 2) determine financial and economic rate of return.

The SWOT analysis was applied for sector and sub-sector program investments, while the MOA screens through feasibility, financial, and cost benefit analysis for projects.

LASIP is based fundamentally on the collation of projects. For example, the palm oil and fruit trees project for smallholders will have a rate of return on investment (ROI) of over 100% for the life of project, while the rate of return for rice seed production by smallholders will range between 30% and 40%.

The increase in investment in the agriculture sector will have a higher return if investment focuses on moving toward low lands. Proper low land and water management for increased production and productivity will that mean two cropping cycles can be accomplished in one year. This requires intensification investment in infrastructure, land, and water management and the use of inputs.

The case of the AfDB Agriculture Sector Rehabilitation Project (ASRP) is important to note. Financial analysis of the project shows that the average annual net income of beneficiary farm households generated from crop sales could increase from \$US130 without the project to roughly US\$568 by 2013. The income increase resulting from improved production technologies and expanded areas under cultivation is expected to increase annual rice (upland and especially in lowland) and cassava/maize production. With respect to irrigated rice, increase in yields and incomes would be achieved mainly through the use of improved varieties and irrigation, as well as of fertilizer and integrated pest management.

Main benefits from the economic analysis derived from: (i) an increase in annual rice and cassava/maize production resulting from the adoption of improved agricultural production technologies (fertilizer, certified seeds/cuttings, mechanization, integrated pest management) and expanded areas (rehabilitation of irrigation schemes); and (ii) the reduction in post-harvest losses (provision of processing units, storage and marketing facilities, and rehabilitation of feeder roads). The costs taken into account for the economic analysis include all project costs (investment, maintenance and operating costs occurring from the operation of irrigation schemes, and the related marketing infrastructures such as feeder roads, marketing centers, and processing units).

The economic internal rate of return (EIRR)^{12/} is based on the following assumptions: (i) net benefits accrue to the project over a period of 25 years from the start date; (ii) all financial prices and costs are converted to economic prices using conversion factors for tradable and non-tradable items; and (iii) investment costs have been computed by considering an economic opportunity cost of capital of 12%. Based on these assumptions, the EIRR of the project was found to be 20%.

The EIRR was high in an underserved region of the south east that had few roads and infrastructure. Thus, investment in better-served areas will yield higher rate of return. The EIRR for food production projects ranges between 30% and 40%. For the above reasons, Program 1, Food and Nutrition, receives the highest priority while Program 2, Competitive Value Chains and Market Linkages, receives the second highest priority (Liberia imported over US\$200 million in 2009 for its rice). The EIRR will be used as a tool for assisting in prioritizing investments relative to the sequencing of LASIP investments.

Cost Benefit Analysis (CBA) Notes on Roads and Capacity Building Projects

Rural Roads and Infrastructure. The MOPW implements rehabilitation and expansion of rural roads through a Road Trust Fund under management of the World Bank. The trust fund's priorities are national/paved roads and municipal roads

Farm-to-markets roads are the responsibility of the counties and various projects that operate in the rural sector. The program does not include roads built by the private commercial plantation sector. There are three main types of farm-to-market road interventions:

- Clearing and engineered rehabilitation – resurfacing, etc. (US\$19,000/km)
- Feeder road – clearing, engineered rehabilitation, small and large bridge repairs, etc. (US\$47,000/km)
- National highway, bridge repairs, gravel resurfacing, etc. (US\$72,000/km). Those costs do not include engineering and headquarters support.

For practical reasons, the cost of a kilometer of rural roads is estimated at US\$75,000/km including design and supervision.

The rebuilding/rehabilitation of 100 km per year per county could be feasible if funding is available. Rural road prioritization requires county and central level consulting. LASIP plans to start with 200–250 km of farm-to-market roads annually, increasing slowly to 300 km/year for the five most productive counties, representing 1,500 km for five years. This will allow higher EIRR for those productive counties (see CBA section above).

Roads cannot be allocated to regions on a lump-sum basis, but on the basis of supporting productive enterprises while giving strong consideration for the justification of feeder roads based on the number of people living in the areas where feeder road rehabilitation will take place.

Institutional/Capacity Building Projects. Institutional projects usually do not require CBA. They are composed of three main components:

- Investment in infrastructure (i.e., equipment)
- Investment in human resources (capacity building programs and technical assistance)
- Selected supplement operational costs.

The assumption is that the majority of those projects for the MOA could start in 2011.

^{12/} AfDB. 2009. Liberia Agriculture Rehabilitation Report, Volume II (Technical Annex B6).

3.3 Funding Sources

3.3.1 National Budget

The implementation capacity of the MOA and its related institutions will need to be enhanced to allow for successful implementation of large-scale programs. The GOL's commitment to the agriculture sector is clear^{13/}; however, public finances are currently inadequate to meet the country's vast post-crisis needs, resulting in only operational support being provided.

Liberia has now reached the completion point of the HIPC, with assistance of international partners such as the IMF. This achievement will enable Liberia to access soft loans for growth and development purposes including support for agriculture.

From 2003 to 2006, Liberia depended completely on international donors and the United Nations' system for management and financial support. When the GOL began to straighten out its financial situation, it encountered many stumbling blocks, i.e., the international food price crisis in 2008, which was further complicated by the international economic meltdown in FY 2008/2009. The government's responses to these impediments have had budgetary implications.

The GOL is cognizant that increased budgetary support will not be sufficient to achieve and sustain the required transformation of the agriculture sector. However, an increase of the agriculture budget from less than 1.0% in FY 2005/2006 to 2.5% in FY 2009/2010 is significant considering the post-conflict status. More efforts aimed at increasing funding to the sector are envisaged as the economy grows and the country's ability to access international financial resources improves. Table 2 shows known financing sources for LASIP by GOL and partners.

3.3.2 Donors

Up to the present, the development of Liberia's agriculture sector has been funded primarily by donors. These include international/regional organizations such as the European Union, AfDB, and ECOWAS; agencies of the UN system including the World Bank; and bilateral donors such as China, Denmark, England, Germany, Japan, Sweden, and the USA.

3.3.3 Private Sector

Capturing detailed data on private sector investment in agriculture is a challenge, but a number of examples support the assumption that it is very significant. Export crops in particular have a very substantial private sector investment component. The private sector is making very substantial investments in both production and infrastructure development components. It is important to highlight that the value attached to new investments by the private sector in the Agriculture and Forestry sector is estimated to be in excess of US\$2.6 billion (see Table 1). It is fairly obvious that despite the absence of detailed data on private sector investment in the agriculture sector, the contribution of the private sector total investment in the sector is understated.

3.4 Gap Analysis

Government revenues rose by a modest amount in 2009 due to the global financial crisis. In the upcoming years, national budgetary levels are expected to increase due to additional budget support from partners and soft loans for which the GOL will now be eligible. Furthermore, more resources will be raised from domestic sources through increased institutional and administrative effort in revenue collection, and expanded economic activity as timber, minerals, and even cash crop exports rise.

^{13/} See the President's Message to the Legislature on the Budget 2010/2011, May 6, 2010.

The best available estimate of international partner contributions to the sector over the 2011–2015 period now stands at US\$175 million (excluding committed but not yet released funds).

The total investment cost of LASIP is estimated at US\$947 million for 2011–2015, with a financing gap of US\$772 million for the agriculture sector. Thus donor funding will have to be increased to finance the funding gap if LASIP objectives are to be accomplished. GOL recognizes that donors are planning additional investments over the period of the LASIP that will reduce the funding gap.

In implementing the LASIP, however, the MOA's budget must be increased to meet additional recurrent costs. International organizations such as AfDB and the World Bank usually request a country contribution of 3% while bilateral organizations require 1% to cover the recurrent costs of investment. MOA financial needs per program, keeping these expectations in mind, are as follows:

- Program 1: MOA needs additional US\$ 6.45 million for five years;
- Program 2: MOA needs additional US\$ 4.03 million for five years;
- Program 3: MOA needs additional US\$ 3.35 million for five years;
- Program 4: MOA needs additional US\$ 3.02 million for five years.

This means that for the period 2011–2015, the MOA will need an additional US\$17 million over five years to efficiently and effectively implement the LASIP.

It is evident that the implementation capacity of the MOA and its related institutions has to be enhanced. Building the capacity of these agricultural institutions should be done as a matter of priority if the level of financing to agriculture is to become meaningful as intended.

The yearly disbursement shows that Liberia's needs would be between US\$123 million in LASIP Year 1 to a maximum of US\$195 million, averaging US\$150 million per year. Amassing these resources will necessitate increased donor funding.

Based on the above financial and economic returns, investment in the most productive areas of Liberia will yield an EIRR between 30 and 35%.

IV. Implementing the LASIP

4.1 Implementation Arrangements for the LASIP

4.1.1 Program Management

Management of LASIP implementation will rest with the MOA. A LASIP Coordinator will be based at the ministry's PMU. There are presently various MOA-based projects aimed at strengthening the work of the agriculture sector; donors include AfDB, World Bank, USAID, and the International Fund for Agricultural Development (IFAD). The PMU's overall goal is to coordinate projects, procure equipment, and provide management, supervision, and capacity building to the agriculture sector. The PMU will also strive to demonstrate transparency to the GOL and stakeholder donors.

The duties of the PMU are, but not limited to, the following:

- Manage the day-to-day coordination of MOA donor-funded projects;
- Plan and coordinate the work of various projects providing support to the MOA;
- Assist the MOA in the coordination and management of donor projects under MOA, including that of the work programs;
- Prepare/compile reports from various donor projects, assisting the MOA to provide periodic reports to the GOL and to MOA donors;
- Ensure that projects are effectively utilized for their intended purposes through the coordination of work programs and budgets; obtain approval of project allocations from the national budget, and conduct external and internal audits as/if required;
- Ensure that results achieved and lessons learned are documented, disseminated, and duly reported to all stakeholders to allow modification as/if required;
- Facilitate donor coordination to eliminate duplication of effort; and
- Provide analysis to the Minister and through him/her to the Cabinet on project implementation in the agriculture sector.

The PMU was established, among other things, in response to the institutional gaps existing in the MOA's public finance management systems. The ministry and GoL in general have made significant efforts to improving the financial management and reporting functions, especially in the last three years. In the past, projects were implemented by donors without much MOA involvement given the relatively poor financial management and procurement systems that were in place. There was limited centralized coordination of sectoral financial management activities. Therefore, having an overarching framework that captured all of the aspects of financial management was desirable. The PMU mandate incorporates performance of the functions required to achieve this. In establishing the PMU, the MOA obtained support of the AfDB to standardize the financial management of the ministry to international standards for preparing, reporting, review, and auditing.

In August 2009, the Liberian legislature enacted the Public Finance Management (PFM) Act, filling a longstanding legal framework vacuum. The act sets out the foundations for credibility, accountability, and transparency in budgetary management to guide and regulate public finances in Liberia. The MOA is required by law to ensure compliance with the PFM Act.

In line with the PFM Act, the MOA will ensure that accounting rules and standards adhere to internationally accepted principles and follow accounting regulations as contained in the Accounting Rules and Standards of the GOL. As a major portion of LASIP's funding is projected to emanate from development partners, LASIP shall follow the specific rules and

standards established in GOL accounting regulations for the accounting of all donor-funded assistance. Reporting requirements as outlined under the PFM Act will be strictly adhered to.

Achieving this goal will require capacity building within the structures of the MOA. The GOL has already committed to strengthening capacity in order to meet the personnel, institutional, and logistical requirements for timely implementation of the LASIP. The MOA will take advantage of the opportunities offered under the Financial Management and Capacity Building Program (FIMCAB) that is being jointly implemented by USAID and the Liberian Institute for Public Administration. FIMCAB is designed to build capacity in key management areas that increase efficiency, accountability, and transparency. FIMCAB builds capacity with courses such as Public Sector Finance, Procurement, Public Sector Management, and Internal Auditing. The MOA will also work with the Public Procurement and Concessions Commission by participating in the public financial management capacity building workshops conducted by that commission.

USAID is completing an administrative and financial management assessment of the MOA to certify the institution for direct procurement of goods and services under future agriculture sector investment programs. The USAID-funded TASMOA project will also provide technical assistance to the MOA for administrative and financial management systems development including individualized training at the core and decentralized levels.

As noted earlier, the MOA set up the PMU. In addition to duties outlined above, the PMU will handle procurement, logistics, and financial systems for various projects and donors. The PMU is a new responsibility of the MOA and is one major component of the ongoing reform and institutional strengthening of the ministry. The PMU was developed to organize, manage, and implement day-to-day operations, starting with the AfDB-funded ASRP. AfDB has assisted the MOA to set up the unit (comprised of a team of local specialists in the area of project coordination, financial management/procurement, infrastructure/procurement, and M&E). At the local level, PMU works with the MOA County Agricultural Coordinators (CACs), District Agricultural Officers, and Clan Technicians.

Furthermore, the PMU uses an accounting system that conforms to international standards and manuals prepared for accounting, administration, and financial management procedures, which detail PMU responsibilities and mechanisms for internal control. Accounts and financial statements will be audited annually by qualified and independent external auditors. This new financial system will help the MOA to handle additional resources and thus, will handle the LASIP.

The MOA's Internal Auditor is responsible for reviewing the organization of financial management within the LASIP and assessing adherence to all financial management procedures and processes as prescribed by the PFM Act and MOF regulations. Where necessary, the Internal Auditor shall recommend remedial actions required to rectify any shortfalls in processes and procedures. Copies of all internal audit reports contracted directly under donor-funded projects shall be reviewed by the Internal Auditor in line with the PFM Act.

4.1.2 Stakeholder Engagement, Cross-sectoral Collaboration and Partnerships

The CAADP and LASIP recognize that agricultural growth and development is more readily achieved in an environment that recognizes and fosters multi-stakeholder involvement and participation. Cross-sectoral collaboration, inter-agency cooperation, and partnerships are particularly essential given the direction and magnitude of change required to transform Liberian agriculture in general and to assure the sustainability of the LASIP's impacts. Linkages among sectors and with the private sector are important; the involvement of farmers, civil society, public agencies, private sector operators, and donors in the implementation and review of program and project outcomes is indispensable for sustainability; and coordinated interventions by public agencies such as ministries that are

charged with various rural development mandates are critical, especially at the field level, to facilitate synergy and ensure efficient resource use.

Liberia has amassed an admirable record of participatory approaches to development planning at the national, sectoral, and institutional levels in recent times. The PRS and preceding national reconstruction and development documents, such as the interim PRS, were formulated through broad-based, multi-stakeholder consultations aimed at gaining a deep understanding of citizens' aspirations, expectations, and priorities, building national consensus, and obtaining stakeholders' buy-in. Development of the Food and Agriculture Policy and Strategy over the 2007–2008 period followed in this direction. It was highly participatory and purposefully inclusive of all stakeholders such as the public sector, private sector, civil society organizations, and development partners. Care was taken through consultations to ensure that the FAPS represented collective thinking for rehabilitating and developing the sector. Formulation of the LASIP also benefited from stakeholder-reviewed secondary data and consultations, from stocktaking and review to the initial validation of LASIP and Compact signing. Following the post-Compact review, appropriate comments were incorporated into the document, validated once more by stakeholders and development partners, and accordingly revised.

Developments in several sectors are determinative of LASIP outcomes: (i) macroeconomic management for public financing of agriculture and private investment in the sector; (ii) health and water and sanitation sectors influence the nutritional status and vulnerability of the population; (iii) education is critical to capacity building; (iv) natural resource management for climate change adaptation and sustainable use of land and water resources; (v) local governance for community buy-in and participation; (vi) gender and youth for mainstreaming these segments in agriculture and food security; and (vii) infrastructure such as roads, energy, and communication for market access and value addition.

This imperative for cross-sectoral collaboration manifests the importance of establishing links with certain ministries and agencies of government. Key agencies and related areas of collaboration are as follows: (i) MOPEA for national and sectoral planning; (ii) MOF for financing and investment; (iii) Ministry of Education for education and training; (iv) MOHSW for health and nutrition; (v) MOGD and Ministry of Youth and Sports for gender and youth mainstreaming, respectively; (vi) Ministry of Land, Mines, and Energy for land, water and energy and the Land Commission for land; (vii) MCI for trade and industrial development; (viii) MIA for local governance and disaster risk management; (ix) Ministry of Labor for labor relations and social protection; (x) MOPW for roads and bridges; (xi) Ministry of Transport for transportation; (xii) Forestry Development Authority for forestry and land use; and (xiii) Environmental Protection Agency for environmental protection, including climate change adaptation.

In order to ensure alignment with the GOL's overall agenda, MOPEA has commenced the coordination and approval of all short- and medium-term plans of ministries and agencies consistent with its sectoral planning mandate and the national vision. The approved plans will serve as a basis for project proposals that will later be submitted by individual ministries and agencies through the Project Management Office of MOPEA for funding through the national budget.

It is within the MOPEA's coordinated sectoral planning framework that the multi-stakeholder, participatory, and inclusive approaches used in developing national, sectoral, and institutional documents will be utilized during LASIP implementation and outcomes review. In addition to matters discussed relative to implementation arrangements in Section 4.1, efforts will be made to review LASIP execution and outcomes at periodic meetings of the Liberia Reconstruction and Development Committee, Cabinet, and PRS Pillar at the national level; the Food Security and Nutrition Technical Committee, Agricultural Coordination Committee (ACC), and Donor Working Group at the sector level; and county development steering

committee and FBO gatherings at the local community level. The aim of these consultations will be to ensure buy-in from all stakeholders particularly farmers, farm-based organizations such as the Liberia Farmer Network and Liberia National Federation of Cooperative Societies, as well as private sector operators along the agricultural value chains and donors. Improving private sector and civil society participation in the implementation and review of LASIP outcomes will receive particular attention. To this effect, the membership of the ACC will be expanded to include the Liberia NGOs network and national civil society organizations, and its capacity will be built to enhance effectiveness. Consultations with key ministries will take place as appropriate in these forums, as well as through inter-ministerial committees, PRS pillars, and governing boards.

The FSNS contains institutional arrangements to ensure continued focus, commitment, coordination, and accountability of efforts, resources, and outputs at the national, sector, and local levels. Under these arrangements, adopted for the LASIP, the President of Liberia will provide national oversight and regularly inform and consult with her Cabinet. The president will also chair the national **Stakeholders' Forum** held periodically for the purposes of sharing information and experiences about the implementation of the investment program.

The inter-ministerial **Food Security and Nutrition Technical Committee** is the highest decision-making body at the sector level. It is chaired by the Minister of Agriculture and includes, but is not limited, to the following agencies: MOF, MCI, CBL, MIA, MOPEA, Environmental Protection Agency, Liberian Business Association, Liberian Bankers Association, Liberia Federation of Cooperative Societies, and Liberia National Farmers Union.

The **Agricultural Coordination Committee**, the **MOA**, and the **Agriculture Donors Working Group (ADWG)** have assigned roles at the sector level. The ACC will provide technical input during the coordination, implementation, monitoring, and evaluation of the investment program, while the MOA will prepare annual plans drawing from elements of the investment priorities for resource mobilization, allocation, and utilization in the sector. The ACC brings together NGOs, FBO representatives, and private sector actors operating in the sector. It is currently chaired by the Deputy Minister for Planning and Development at the MOA, and its meetings are attended by representatives from the MOPEA. Five of its sub-sector working groups are focused on cocoa, rice, methodology, peri-urban agriculture, and the private sector. There are firm plans to encourage greater participation by civil society organizations and private firms involved in input and output marketing, as well as other value chain activities.

The ADWG will enable close collaboration between donors and development partners with the MOA; provide coordination services among country-level donors such as information, management, communication, and technical advice; and improve the quality and coherence of the policy dialogues and aid, allowing a coordinated and participatory preparation of the LASIP.

The ADWG tasks are to: (i) share information on projects/programs, future plans, consultancies, studies, and requests for assistance in the agriculture sector; (ii) actively seek to coordinate interventions and explore opportunities for joint donor activities, e.g., studies and assessments, harmonized procedures, and program-based approaches; (iii) ensure regular communication and dialogue with the MOA in order to develop partnership, promote dialogue, and ensure that interventions are complementary and strategically linked to the LASIP; and (iv) provide an opportunity to participate jointly in MOA capacity building.

The ADWG comprises MOA representatives (i.e., Planning Division and PMU), in-country donors representatives (World Bank, USAID, SIDA, Japan International Cooperation Agency, European Union, International Finance Corporation), other donor representatives (AfDB), and UN agencies (Food and Agriculture Organization [FAO], IFAD, WFP). NGOs may participate in deliberations of the ADWG depending on the topic and upon invitation. Every group member nominates alternate representatives in order to ensure regular member

presence in meetings that are held on a bi-monthly basis, or more frequently in case of need. Plans are the responsibility for chairmanship, and administrative assistance will be shared between the group members on a rotational basis. The chairmanship duration would be for six months. The chair is responsible for meeting venue arrangements and taking and distributing meeting minutes.

Appropriate oversight also exists at the county, district, and clan levels. A **County Development Steering Committee** will coordinate inputs from each of Liberia's 15 counties into the annual plans and programs prepared by the MOA. These committees will monitor implementation in towns and other local communities, and at the sub-county level. Communities will be assisted through their decentralized structures to organize, contribute to, and develop annual plans, as well as participate in investment activity M&E.

4.2 Programs

LASIP is composed of four programs: Food and Nutrition Security, Competitive Value Chains and Market Linkages, Institutional Development, and Land and Water Development (see details in Section 3.1.2). These programs are interlinked, but priorities come from SWOT and CBA analysis and the importance of "food security" for Liberia.

Each program is composed of sub-programs made up of projects that will be implemented by various stakeholders as soon as funding is available. Thus, each program can be sequenced to optimize their use and economic optimization in accordance with GOL priorities.

LASIP staff will include a LASIP General Coordinator and a manager for each program (e.g., the Program 1 Manager will work and coordinate with stakeholders such as the MOPW, the MOHSW, and the MODG to ensure that Program 1 meets its targets).

Program 1, Food and Nutrition Security, comprises various sub-programs that support each other. For example, there is a need to move toward intensification of low lands, but the need for combating schistosomiasis is a precondition to the success of the expansion of land. This program will therefore be managed in close coordination with MOHSW and the MODG.

The management of Program 2, Competitive Value Chains and Market Linkages, will require coordination with the MOPW and implementing partners both at the central and local levels.

The management of Program 3, Institutional Development, is focused on the MOA and associated parastatals. Results of institutional assessments already undertaken, as well as those contemplated for execution, will require legislative actions, particularly those that seek to reform parastatals.

Management of Program 4, Land and Water Development, will result in the creation of an enabling environment for the agriculture sector. The PMU will be the focal point for management and resolution of problems encountered during LASIP implementation with stakeholders and donors; its access to M&E capabilities will enable it to perform this critical function. The ACC will provide a forum for information exchange and coordination in view of its technical contributions to the program.

4.3 Sub-Programs

Each LASIP program is composed of several sub-programs, each of which is composed of various projects. These sub-programs are developed and appropriately sequenced to facilitate implementation during the 2011–2015 period.

Program Managers will coordinate the annual work plans and disburse funds for each sub-program/project. Stakeholders in the agriculture sector range from NGOs to the private sector. As stated earlier, coordination and sequencing will be important to obtain maximum synergy. For example, there is a sub-program to expand irrigable land in Program 4, Land and Water Management. This sub-program will start with an assessment of possibilities (with

a maximum duration of one year), followed by a project preparation component, and the implementation of an irrigation/low land expansion project. The assessments will also “feed in” inputs to implementing partners of the irrigation sub-program.

4.4 Investing in Policy Review and Improvement

Past agricultural development efforts have failed to address the fundamental challenges of low productivity, inaccessible markets, and ineffective institutions on a sustainable basis. The LASIP was thus designed as a PPP in which the public sector would concentrate on policy, regulation, and delivery of essential services in support of the production, value addition, marketing, and other related functions that private enterprise, including farmers, would undertake to foster growth and development. This change in the thrust of agriculture will be difficult and time-consuming, requiring long-term sustained engagement by the GOL and development partners in order to transform the sector for the benefit of all, including smallholders. The main challenge would be conversion of a system characterized by an economically concentrated commercial plantation sector coexisting with large numbers of poor farm households involved in low input/low output (shifting) cultivation to one in which there is broad-based farmer participation in integrated, productivity-driven cash crop/food crop systems. Effecting this approach requires strategic direction, systematic processes, and greater participation from a wide cross-section of Liberian and regional actors in order to move from specific policy and program announcements to a set of concrete actions and investments that are specific to population groups and geographical areas.

The implications of this changed thrust, as well as those related to the sustainable, effective, and efficient implementation of the programs and sub-programs of the LASIP, necessitate the development of enabling policies. The main policy areas with direct implications for the desired transformation of the sector are as follows: (i) clarity regarding the role of the public sector relative to that of the private sector; (ii) commitment of government to agricultural development financing including allocation of 10% of the national budget to the sector and facilitation of private investment; (iii) maintenance of openness in external economic relations with specific focus on regional trade and integration while mindful of the need to improve domestic competitiveness; (iv) mainstreaming of gender and youth perspectives in all sector programs, projects, and activities to deter marginalization, foster conflict-sensitivity, and ensure productivity enhancement and empowerment; (v) pursuit of a pro-poor, smallholder agenda to overcome the existing low input/low output trap that has frustrated poverty reduction; (vi) protection of vulnerable segments of the population from food insecurity through livelihood enhancement and other safety nets; and (vii) facilitation of cross-sectoral, inter-agency collaboration in cognizance of the holistic, integrated, and synergistic approach needed to elicit sustainable and equitable sector growth and development.

Specific policy issues related to LASIP program and sub-program activities have to be viewed in the context of these broad policy areas that underlie the transformation of agriculture. They are interrelated, and many were identified in Section II of this document, while others were implicit. The LASIP-specific policy agenda comprises:

- (i) *Food and nutrition security:* Access to quality inputs including seeds, fertilizers, and integrated pest management; ratification of a multi-sector nutrition strategy and program including diversification and promotion of micronutrient-dense food and fortification; food pricing, particularly rice; health and environmental consequences of lowland development; emergency preparedness, response, and contingency; comprehensive social protection; support for developing smallholder tree crop farms and linkage with large-scale concessions; and fisheries and livestock development legislation.
- (ii) *Competitive value chains and market linkages:* Promotion of private sector-led agricultural value chains development including incentives for both domestic and

foreign investors; development of input and output markets including role of parastatals and other state actors; and comprehensive market access including roads, energy, and marketing infrastructure.

- (iii) *Institutional development*: Role of the public sector, including parastatals, in agriculture, technology generation, transfer, and adoption; linking educational and training programs to sector needs and promoting their improvement; promotion of FBOs; and women and youth empowerment.
- (iv) *Land and water Development*: Support for land policy with focus on access, security, and use; and land inventory and assessment including investment priorities, suitability, husbandry, information exchange, and sustainable management of wet and degraded land.

Several of these policy areas and issues are being addressed within the framework of Liberia's extensive and challenging reform agenda. Prescriptions for policies that impact the enabling environment for agriculture have been or are being devised as part of Liberia's performance in meeting requirements related to external opportunities such as HIPC, the Millennium Challenge Corporation, UN Security Council resolutions, and ECOWAS protocols. They include poverty reduction, macroeconomic stability, public financial management, access to social services (i.e., education and health), debt management, and governance. Other efforts are promulgation of a new investment code to level the playing field for both domestic and foreign investors and the associated task of developing concession policies to guide investment in mining, agriculture, and forestry; development of trade, industrial, capacity building, decentralization, energy, and other policies; and for the food and agriculture sector, the formulation and ongoing implementation of the FAPS and NFSNS.

Six policies that require urgent formulation are: (i) Land Policy to define access, use, and tenure security; (ii) Food Pricing Policy with a focus on developing domestic rice production capacities; (iii) Agricultural Incentives Policy to encourage private sector investment in the sector, promote PPPs and ensure access to quality inputs and other services (e.g., rural financing) by smallholder farmers; (iv) a Policy on the Role of Government in Agricultural Growth and Development that would also discuss public financing of the sector and actions to meet the 10% Maputo Declaration mandate; (v) a Social Protection Through Agriculture Policy that would address the needs of vulnerable segments of the population such as the physically challenged; and (vi) a National Seed Policy to assure quality planting materials.

4.5 Risks and Mitigation Measures

Liberia's history of growth without development and its recent conflict experience underpin risks that are inherent with the implementation of the LASIP. Fragile stability, the potential for protracted food insecurity amid growth, corruption, and lack of institutional capacity and continued national commitment to reform are at the crux of a number of risks that have been identified that could potentially limit meeting project targets and objectives. Table 6 presents these risks and their possible mitigation measures.

Table 6: LASIP Risks and Mitigation Actions

CATEGORY	NATURE OF RISK	MITIGATION ACTION
1. Political Risk	Recent history of conflict and lack of control over regional developments could undermine fragile stability resulting in a return to conflict.	- Continued strong presence of UN peace keepers amid drawdown and strengthening of national security - Support of democracy programs by the GOL and partners - Ongoing efforts in Sierra Leone, Guinea, and Côte d'Ivoire to reduce potential for domestic and pan-territorial conflict
2. Social Risk	Citizens' high expectations of immediate peace dividend, particularly employment opportunities, are unmet, triggering social implosion.	- PRS and socio-economic reforms in place - Economic activity uptrend - Youth unemployment and gender inequality receiving serious attention by GOL and partners - Creation of awareness and information sharing
3. Economic Risk	Food insecurity persists despite economic growth and could worsen due to unfavorable domestic and external environments	- Traditional growth drivers (agriculture, forestry, and mining) rebounding; outward-looking posture elicits increased trade and investment - Increased sensitivity to environmental issues such as climate change - Global food prices not expected to grow beyond recent trends, and international food assistance and safety nets expected to be unimpeded
4. Capacity Risk	Corruption and lack of institutional capacity could deter ownership and sustainability of LASIP outcomes.	- Anticorruption measures being put into place (i.e., Liberia Anti Corruption Commission, Liberia Extractive Industry Transparency Initiatives, Anti-Corruption Executive Order, General Auditing Commission auditing, financial management systems) - Capacities of national institutions and communities being built
5. Strategic Risk	Liberia may not stay on the reform path, and donor fatigue may set in.	Country has attained HIPC completion, making reversal of policy stances difficult and ensuring continuing international assistance (e.g., budget support)
6. Environmental risks	Climate diversity changes food production patterns and health problems.	NAPA being fully implemented; disaster risk management policy developed
7. Equity Risk	Lack of access to political, social, and economic opportunities lead to renewed conflict.	Implementation of PRS and successor agenda will reduce inequities.

V. Organization and Implementation of the LASIP M&E System

The goal of the LASIP M&E framework would be to regularly assess the amount and type of investments made, and whether and how these investments (and related policies and practices) are having their desired impact on growth in relation to the GOL's poverty reduction. Specifically, the outputs of the overarching M&E system will address questions related to enabling environment for successful implementation of LASIP, delivering on commitments from donors, effectiveness of interventions, consistency of planned interventions with initial targets, and exploration of policies and interventions with greater and better distributive outcomes. The LASIP M&E system will be used to strengthen the sector's overall reporting to the nation M&E system as envisioned in the PRS and subsequent economic growth strategies.

5.1 Implementation of LASIP M&E Framework

Successful implementation of the LASIP M&E framework will ultimately depend on the extent to which the following issues are taken care of:

- Sufficient and adequate information on indicators and output generated on a regular basis and in a timely fashion;
- Linkages at the different levels and working under clearly defined roles and responsibilities, and using shared data standards and protocols;
- Standardization and harmonization of the core set of data and indicators across countries that will enable cross-country comparisons and contribute to peer and mutual reviews of the LASIP at regional and continental levels;
- Regular collection, measurement, analysis, documentation, and processing of data at national and regional levels;
- Roles and responsibilities of different partners at the national, regional, continental, and international levels in terms of data collection, management, analysis, and reporting; and
- Timely publication of these indicators and related monitoring reports.

5.2 What to Monitor and Evaluate under LASIP

There are numerous documents on how to design and implement M&E systems. In many of those publications, considerable attention is given to the selection of indicators as they are at the heart of any monitoring and performance evaluation system. In selecting indicators, it is generally agreed that the indicators must be SMART: Specific, Measurable, Achievable, Realistic, and Timely. For LASIP therefore, the criteria for selecting indicators reflect the following: inputs, processes, policies, investments, outputs, and outcomes associated with the activities being implemented across the different pillars of the LASIP document. LASIP indicators will also capture critical landmarks based on impact, i.e., impact of interventions on agricultural productivity, output growth, poverty reduction, hunger, and food and nutrition security.

LASIP is forward looking, and its M&E system is designed to capture processes, policies, and investments across the various pillars with consideration for assessing capacity strengthening and its capabilities for achieving the goals and objectives of the program. In other words, the logic of LASIP directs the M&E system to assess how the interventions and outputs associated with each individual pillar affect and/or is affected by those associated with other pillars, and how other conditioning factors (especially those outside the control of

the Program Managers) are likely to influence implementation of the program and realization of the objective and goals of the program.

A successful implementation of the LASIP M&E system ultimately depends on the extent to which sufficient information on the indicators and outputs can be generated on a regular basis and in a timely fashion. This in turn depends on whether the MOA prioritizes the development of an adequate national agriculture statistical database that is maintained and updated periodically and is easily accessible within a reasonable time. It should be noted that Liberia is currently implementing a PRS program in which the importance of uniformity in data selection has been addressed to provide synergy in the implementation of the ministry's M&E system following through from the PRS to CAADP and LASIP.

The LASIP M&E system will address the following three major components:

1. Selection of the data needed to calculate the values of the indicators to conduct requisite analyses. For purposes of expediency, the LASIP's M&E system will adopt a set of core indicators (approximately 20) that will tell a compelling story about progress and performance of LASIP implementation at national, regional, and continental levels. Moreover, the result chain developed for the program (key activities, outputs, outcomes, and impacts) together form the basis for indicator selection.
2. Selection of a set of indicators that allows for standardization and harmonization of the core set of data and indicators across countries to enable cross-country comparisons and contribute to peer and mutual reviews of CAADP and LASIP at regional and continental levels.
3. Roles and responsibilities of different partners at the national, regional, and continental levels.

5.3 Data Collection

The primary responsibility for collecting and managing data related to selected core indicators rests with the MOA. This activity will be coordinated in conjunction with the M&E Directorate, which will be housed in the ministry and will function as a forum that brings together generators and users of agricultural information nationwide. Additionally, the M&E Directorate will function to link users of agricultural data in other programs through the MOA's PMU.

Both qualitative and quantitative methods of data collection will be used by the M&E system to generate the needed data. Data will be collected to carry out trend, situation, and simple correlation analyses to monitor progress relating to commitment of donors, government, 6% agric growth, and the MDG1 goal. Data will also be collected to look at the effectiveness of interventions.

5.4 Data Analysis

The M&E system for the LASIP program is organized on the premise that management decisions must be buttressed and informed by grassroots program activities. Accordingly, monitoring of LASIP activities will be conducted at all administrative levels—district, county, and national.

District level: The District Agricultural Officer is the focal point, with responsibilities for coordinating agricultural development activities at the district level. More specific, the District Agricultural Officer will track and document program activities, collect preliminary data to inform field decisions. Where unable to utilize information to resolve district level problems, a data set will be promptly forwarded to county or national level officials for technical backstopping.

County level: M&E at the county level will aim to track program performance and delivery of inputs, outputs, and outcomes. The CAC will lead the data collection, analysis, and reporting efforts at the county level. NGOs participating in development activities at the county level

will generate data and information relevant to their areas of activities, analyze data, and submit reports and findings to the National Agricultural Officer (MOA) for collation and further analysis. Additionally, all development partners active in the agricultural sector will be expected to submit quarterly reports to the CAC.

National level: At the national level, a structured component of the LASIP M&E system is the information feedback loop. Stated alternatively, M&E findings under LASIP will be communicated forward to inform policy/managerial decisions at national, regional, and continental levels, and at the same time communicated backwards to address observed constraints and/or bottlenecks at the district and county levels.

5.5 Proposed M&E Annual Report Format

5.5.1 Introduction

The following issues regarding the proposed M&E annual report format are discussed in the introductory section: purpose, objectives, and target audience; reporting period; scope of report; overview of major changes in trends compared to last reporting period; whether interventions are on track to achieve stated targets or not; and implications for staying on track or for achieving greater and better distributed outcomes.

5.5.2 Enabling Environment

The following issues are discussed as part of the enabling environment: situation analysis of political governance and economic management in reporting period; description of changes in trends compared to last reporting period, and key causes of the changes; how changes may affect success of LASIP implementation; anticipated changes in the environment in the next reporting period; and steps to minimize any negative effects or maximize positive effects of LASIP.

5.5.3 Implementation Process

The implementation process covers the following: status of LASIP investment plan in terms of programs compared to targets stated in last reporting period; description of key factors limiting or enhancing progress; expectations for reaching the next major stage in the process; and what needs to be done to make it happen.

5.5.4 Tracking Commitments and Agricultural Spending

This portion discusses agricultural spending by government, donors, and the private sector in the reporting period compared to commitments made and targets stated in the last reporting period; description of changes in trends and likely causes of the changes; and description of major factors contributing to spending patterns on different types of public goods and services.

5.5.5 Agricultural Growth Performance

Indicators of agricultural growth performance consider: economy- and sector-wide growth, contribution of different sub-sectors and major commodities to agricultural growth, and other growth performance indicators in reporting period; description of changes in trends compared to targets and performance in the previous reporting period; likely causes of the changes in trends; and description of key factors limiting or enhancing agricultural growth in different places.

5.5.6 Agricultural Trade Performance

Factors identified as impacting or influencing agricultural trade performance and thus part of the annual reporting schedule are as follows: value and volumes of agricultural exports and imports, other agricultural trade performance indicators, and contribution of different sub-sectors and major commodities to trade in reporting period; description of changes in trends compared to targets, as well as performance in last reporting period; likely causes of the

changes in trends; description of key factors limiting or enhancing agricultural trade in different commodities; demand outlook for major commodities; and long-term price projections for major commodities.

5.5.7 Poverty, hunger and food and nutrition security (CAADP/MDG goals)

Poverty, hunger, and food and nutrition insecurity rates and related indicators that will be tracked during the reporting period are as follows: description of changes in trends compared to targets, as well as performance in the previous reporting period; differences in outcomes across different places and socio-economic groups and reasons underlying differences; whether on track to achieve target rates or not; and implications, including what needs to be done, for staying on track or for achieving greater and better distributed outcomes.

5.6 Specific Roles and Responsibilities of Various Actors of the M&E Process

5.6.1 Roles and Responsibilities of the M&E Directorate

The M&E Directorate will be responsible for the following:

1. **Establish an M&E System:** The M&E Directorate will oversee development of an integrated M&E system. This will include procedures and processes that will be documented in an M&E manual or other format, to be used by all MOA staff and program implementers.
2. **Provide M&E Orientation and Capacity Building for Stakeholders:** The M&E Directorate will be responsible for communicating the M&E plan and M&E system to all key stakeholders involved in the agricultural sector to ensure there is a common understanding of the overall process. This will take the form of orientation and capacity building sessions at the national and county levels and will focus on issues such as:
 - a. Reviewing and validating indicators, data collection methods and sources, and timing/frequency of data collection and reporting
 - b. Target setting and review
 - c. Data quality controls and verification procedures
 - d. Impact evaluation questions and methodology.
3. **Conduct M&E Orientation and Capacity Building for Stakeholders.** This will be an ongoing activity and will be rolled out as the situation demands.
4. **Establish an Effective Documentation System:** The M&E Directorate will develop and use a documentation system to ensure that key M&E actions, processes, and deliverables are systematically recorded. The documentation will encompass the following elements:
 - a. Performance Monitoring Plan
 - b. Performance Indicator Tracking Table
 - c. Changes to the M&E Plan
 - d. Key M&E deliverables including terms of reference, contracts/agreements, and surveys (including data collection instruments and reports/analyses).
5. **Disseminate Information and Findings:** The M&E Directorate will develop and implement a systematic dissemination approach to ensure participation of all the stakeholders, and to facilitate feedback of lessons learned into the program implementation process. Different approaches to information packaging and dissemination will be employed depending on the stakeholders being targeted. Information will be disseminated following the completion and adoption of findings from

surveys, studies, and quarterly and supplementary reports. Apart from dissemination seminars and the website, periodic outreach sessions (frequency to be determined) will be vehicles for disseminating information and findings.

6. **Conduct Data Quality Reviews:** Data quality reviews will be conducted on a periodic basis to assess the quality of data reported.
7. **Participate in Program Monitoring:** The M&E Directorate will participate in program monitoring through field visits, review of project reports, and analysis of performance monitoring and other data. Project monitoring will be an ongoing exercise beginning from the start of actual implementation of activities. In order to keep track of program activities effectively and initiate corrective action promptly, all staff of the M&E Directorate will be required to provide feedback to the M&E Director, reporting on observations made during field visits. For this purpose, staff will use a Field Trip Report format.
8. **Facilitate Beneficiary Feedback:** Develop the capacity of program beneficiaries in participatory M&E techniques, to involve beneficiaries in program monitoring.
9. **Formulate an M&E Work Plan:** Develop an M&E work plan to be updated annually.
10. **Supervise the Design and Implementation of an Impact Evaluation Strategy:** The M&E Directorate will contribute to the design of the MOA impact evaluation strategy, and will contract for and supervise the implementation of impact evaluations and associated data collection efforts.
11. **Foster a Results-oriented Culture:** As the champion of results-based management, the M&E Directorate will take steps to foster a results oriented culture within MOA and among its partners.

5.6.2. Roles and Responsibilities of Directorates/Departments of MOA

1. Review technical and subject matter related reports submitted by CACs and provide feedback to the latter.
2. Conduct validation and verification checks on information provided by CACs.
3. Submit quarterly synthesis report to the FSNSTC with copies to the Planning Department.
4. Carry outfield monitoring of subject matter related interventions and provide feedback.
5. Participate in program review meetings.

5.6.3. Roles and Responsibilities of County Agricultural Offices in M&E

1. Plan implementation of project activities with MOA staff and implementing partners.
2. Supervise activities of MOA staff and provide useful backstopping to them.
3. Verify and process data submitted by MOA field staff.
4. Collate and write monthly and quarterly progress reports, as well as annual reports on program activities and submit to national office.
5. Provide feedback to field officers after processing and analysis of data.
6. Carry out field monitoring visits and prepare field monitoring reports using Field Trip Report format.
7. Assist field staff in training beneficiary groups in participatory monitoring and follow up on participatory monitoring activities of beneficiary groups; they will also incorporate results of this monitoring activity in quarterly reports. These reports will complement results obtained using more formal methodologies.
8. Organize program review meetings at the county level and participate in program review meetings at the national level.

5.6.4. Roles and Responsibilities of District Agricultural Offices in M&E

1. Collect field data using prescribed formats.
2. Submit monthly, quarterly, and annual progress reports to the County Agricultural Officer.
3. Utilize findings arising from progress and field visit reports to assist farmers to improve performance.
4. Train farmers in participatory monitoring techniques.
5. Use output of information generated through participatory monitoring records of farmers and other beneficiaries to complement results from the conventional monitoring approaches.
6. Inform higher level authorities promptly when solutions to problems lie beyond the scope of their capability.
7. Participate in program review meetings.

5.6.5. Roles and Responsibilities of NGOs involved in Agricultural Development at District and County levels in M&E

1. Prepare monthly, quarterly, and annual reports and submit to District/County Agricultural Officers as needed.
2. Engage in joint work planning sessions with County/District Agricultural Officers.
3. Participate in monitoring of program activities.
4. Participate in program review meetings.

5.7 Indicators for LASIP

Both quantitative and qualitative indicators have been selected under the LASIP to provide a rounded picture of progress towards results. Quantitative indicators have a numerical value attached to them, such as the volume of food crop production, kilometers of feeder roads constructed, fertilizer application rate per hectare, number of farmer trained, percent of farmers adopting improved technologies, and percentage increase in the value of agricultural exports. Qualitative indicators reflect peoples' judgments, opinions, perceptions, and attitudes of a given situation or subject such as assessment of training by beneficiaries, assessment of services provided to program beneficiaries, etc.

The indicators are consistent with those selected under the CAADP implementation framework to monitor progress relating to commitments and effectiveness of interventions relating to programs and sub-programs of the LASIP. These indicators are presented below:

Table 7: LASIP Cross-Sectoral Monitoring and Evaluation Indicators

INDICATORS ON ENABLING ENVIRONMENT					
INTERVENTION AREA	INDICATOR/DEFINITION	DISAGGREGATION	DATA	METHODS	SUGGESTED DATA SOURCES
Political Governance	Number political unrest events related to governance	Economic sector Rural/urban Gender and age group	Strikes	Descriptive statistics	Ministry of Justice
Macro-economic Management	Deficit to GDP ratio Revenue to GDP ratio Debt to GDP ratio	Economic sector/sub-sector	Revenues, dept, trade balances	Simple ratio	Ministry of Finance Ministry of Commerce and Industry
	Producer support estimate (PSE)	Sector/sub-sector Major commodities	GDP data	Simple ratio	
	Import tariff and quota	Major commodities	Average import tariff rates Average import quota (%)	Simple ratio	
	Export tariff and quota	Major commodities	Average export tariff rates Average export quotas (%)	Simple ratio	
	Inflation rate	Major commodities	Inflation rate Annual % GDP deflator	Simple ratio	
Private Sector Development	% of population with access to financial services for agricultural and rural development	Rural/urban Gender	Population statistics Total bank loan Total agriculture loan	Simple ratio	Banking and financial institutions CDA report
	Proportion of total value of commercial loans to agricultural and rural development	Sub-sector Major commodities	Total commercial loan Total agriculture loan	Simple ratio	
Donor Harmonization	Proportion of total value adopting common mechanisms and procedures for financing development activities	Sub-sector Major commodities	Total donor funding Total funding to sub-sector	Descriptive statistics	Ministry of Finance Development partners
	Share of total donor direct budget support	Donor	Total donor funding Total agriculture budget	Descriptive statistics	Ministry of Finance Development partners

INDICATORS ON COMMITMENT AND SPENDING					
EXPECTED OUTCOME	INDICATOR/DEFINITION	DISAGGREGATION	DATA	METHODS	SUGGESTED DATA SOURCES
Increased Spending on Agriculture Sector	Share of government agriculture budget in total government budget Share of government agriculture expenditure in total government expenditure Share of government agriculture expenditure in agriculture GDP Share of donor in total donor support Share of donor for agriculture in agriculture GDP Share of private sector agriculture expenditure in agricultural GDP	Economic (development, recurrent) Function (research, extension, irrigation, NRM, marketing infrastructure, farm support, food imports, etc.) Sub-sector (crops, livestock, forestry, fisheries) Major commodities LASIP pillars	Total government agriculture budget (GAB) Total government budget (TGB) Total government expenditure on the agriculture sector at constant prices in international \$ (GAE) Total government expenditure at constant prices in international \$ (TGE) Total donor on the agriculture sector at constant prices in international \$ (agDonors) Total private sector expenditure on the agriculture sector at constant prices in international \$ (PrAE) Agricultural value-added at constant factor prices in international \$ (AgGDP) GDP deflator	Trend analysis	Ministry of Finance Ministry of Agriculture Development partners
Increased Spending on Other Sector	Share of government expenditure on other sectors in total government expenditure	Sector: infrastructure (e.g., roads, transport); social services (education, health, water); social security; defense; capacity strengthening, etc. Rural/urban	Total government expenditure on the sector at constant prices	Trend analysis	Ministry of Finance Ministry of Roads and Transport Accountant General's office Donor offices Chamber of Commerce IMF

INDICATORS ON PROVISION, COVERAGE, AND UTILIZATION OF AGRICULTURAL AND RURAL SERVICES, AND FACTORS OF AGRICULTURAL PRODUCTION					
EXPECTED OUTCOME	INDICATOR/DEFINITION	DIS AGGREGATION	DATA	METHODS	SUGGESTED DATA SOURCES
Improved Agricultural Research and Technology Development	Number of major technologies released	Public/private Sub-sector (crops, livestock, forestry, fishery.) Major commodities	Number of technologies Yield gap over previous technologies	Production with improved technology	Ministry of Agriculture NARS offices Environmental Protection Agency
Increased Technology Adoption	Percent of agricultural land area under improved technologies or sustainable management practices	Technology (hybrid seeds, fertilizers, pesticides, etc.) Type of practice (agro-forestry, forestry, etc.)	Total area under improved technology area in ha Total agricultural land area in ha	Descriptive statistics	
	Percent of total livestock units of improved breeds		Total number of improved breeds Total livestock units	Descriptive statistics	
	Percent of fish farming under sustainable management		Total fish farming area under sustainable practices Total area under fish farming	Descriptive statistics	
Increased Use of Water Management Systems	Percent of agricultural land area under irrigation	Public/private Major systems Major commodities	Total area under irrigation in ha Total agricultural land area in ha	Descriptive statistics	Ministry of Agriculture
Improved Road Infrastructure	Road density (RD) Road quality	Rural/urban Type (asphalt, gravel, feeder)	Total length of road Total length of road in condition (e.g., poor, fair, good) Total land area in km2 (A)	Physical counts	Ministry of Public Works and Transport
Increased Access to Rural Infrastructure and Services	Percent of population within 15, 30, or more than 30 minutes of infrastructure or service Percent of population within 1, 5, or more that 5 km of infrastructure or service	Rural/urban Type of service (road, market, storage and processing facilities, primary school, health facility, etc.)	Total number of markets Total storage and processing centers Total number of rural households with access to energy	Impact survey	National Statistical Office National Living Standard and Consumption Surveys
Reduced Post-harvest Losses	Percent of total agricultural production that is lost post-harvest	Major commodities	Total losses associated with storage, processing, and transportation	Post-harvest assessment	Ministry of Agriculture Liberia Institute of Statistics and Geo-Information Services (LISGIS)
Increased Utilization of Markets	Percent of agricultural production that is sold	Sub-sectors Major commodities Rural/urban		Market survey	
Improved Emergency Response	Number of early warning systems Capacity utilization of food reserve	Rural/urban	National buffet stock	Food balance sheet	

INDICATORS ON PROVISION, COVERAGE, AND UTILIZATION OF AGRICULTURAL AND RURAL SERVICES, AND FACTORS OF AGRICULTURAL PRODUCTION					
EXPECTED OUTCOME	INDICATOR/DEFINITION	DISAGGREGATION	DATA	METHODS	SUGGESTED DATA SOURCES
Improved Capacity of Ministries, Public Agencies, Trade Negotiators	Number of professionals per 1000 farmers Proportion of staff that have left for other opportunities Number of approved but unfilled positions, as ratio of total staff Ratio of recurrent expenditure to capital or total expenditure	Function (research, extension, trade specialists/ negotiators) Level of training (PhD, MS, BS, diploma, other) Area of training (economics, crops, livestock, forestry, fisheries, etc.) Gender	Level of staff qualification	National capacity assessment	Ministry of Agriculture Ministry of Commerce CARI

INDICATORS ON AGRICULTURAL GROWTH PERFORMANCE					
EXPECTED OUTCOME	INDICATOR/DEFINITION	DISAGGREGATION	DATA	METHODS	SUGGESTED DATA SOURCES
Increased Agricultural Production, Productivity, and Growth	Real agricultural GDP percentage growth rate	Sub-sector (crops, livestock, forestry, fishery) Major commodities	Agricultural value-added at constant factor prices in international \$ in current year and previous year GDP deflator	Trend analysis	Ministry of Agriculture Ministry of Finance
Increased Technology Adoption	Agricultural factor (land, labor, capital) productivity (international \$ per hectare) Land (AgL) Labor (AgW) Capital (AgK)	Sub-sector (crops, livestock, forestry, fishery) Major commodities	Agricultural value-added at constant factor prices Total agricultural land area in ha Total number of agricultural workers (W) Total value of capital (K) GDP deflator PPP rate	Trend analysis	
	Yield (ton-equivalent per unit production unit))	Major commodities	Total output of commodity in MT Crops and forestry: Total area under production of commodity in ha Livestock: Total number of tropical livestock units Fishery: Total weight equivalent of fish stock (F)	Trend analysis	
	Share of AgGDP or yield derived from improved technologies	Technology (hybrid seeds, fertilizers, pesticides, etc.)	Total yield from improved technologies (AgGDP)	Simple ratio	

INDICATORS ON AGRICULTURAL GROWTH PERFORMANCE					
EXPECTED OUTCOME	INDICATOR/DEFINITION	DISAGGREGATION	DATA	METHODS	SUGGESTED DATA SOURCES
Increased Food Supply	Food production per capita	Major commodities	Amount of total food produced in MT Total population	Descriptive statistics	Ministry of Agriculture Ministry of Commerce Food balance sheet
	Food consumption-production gap ratio		Amount of total food produced in MT Amount of total food consumed in MT		

INDICATORS ON AGRICULTURAL TRADE PERFORMANCE					
EXPECTED OUTCOME	INDICATOR/DEFINITION	DISAGGREGATION	DATA	METHODS	SUGGESTED DATA SOURCES
Increased Agricultural Trade	Value and volume of total agricultural exports and imports	Sub-sectors Major commodities	Value of total agricultural exports and imports Volume of total agricultural exports and imports MT	Descriptive statistics	Ministry of Commerce and Industry Ministry of Agriculture LISGIS
	Agricultural imports to agricultural exports ratio)	Sub-sectors Major commodities	Value of total food exports and imports		
	Food imports to agricultural exports ratio	Sub-sectors Major commodities	Value of total processed agricultural exports		
	Food import-export ratio				
	Share of intra-regional trade	Sub-sectors Major commodities	Value of total agricultural exports originating from and going to countries in the region		
	Share of value-added content of trade				
Favorable Prices	Ratio of domestic producer prices to international market	Major commodities	Domestic producer or input price of commodity in MT	Price analysis	Ministry of Commerce and Industry Ministry of Agriculture
	Ratio of retail to farm gate prices (RFG)	Major commodities	International market price of commodity in MT Retail price of commodity in MT		

Poverty, hunger and food and nutrition security indicators					
Expected Outcome	Indicator/definition	Disaggregation	Data	methods	Suggested data Sources
Reduced Poverty	Poverty incidence ratio (P1) Poverty gap ratio (P2) Share of poorest quintile in national income (P3)	Rural/urban and other sub-national Gender Age group Economic sector	Population with consumption expenditure below national and international poverty line Total population Purchasing Power Parity (PPP) rate for converting local value of consumption expenditure Average consumption expenditure of the poor in \$ per day Total consumption expenditure of the bottom 20% of the population Total consumption expenditure of the total population.	National Living Standard and Consumption Surveys (LSCS)	National poverty monitoring agencies LISGIS MOPEA
Reduced Hunger	Proportion of the population below minimum dietary energy consumption Prevalence of underweight children under 5 years of age; Global Hunger Index	Rural/urban and other sub-national Gender Age group Economic sector	Number of people with dietary energy consumption below 2414 kcal per day Total population Number of children under 5 years of age whose weight-for-age is less than minus 2 standard deviations from the median of the WHO reference population Population of children below under 5 years of age Global Hunger Index	Health Surveys (DHS)	Ministry of Health LISGIS
Reduced Food and Nutrition Insecurity	Dietary Diversity Score (DDS) Resilience Score (RS) Share of food expenditure (SFE)	Rural/urban and other sub-national Gender Age group Economic sector	Dietary Diversity Score (DDS) Resilience Score (RS) Consumption expenditure on food	VAM studies	LISGIS Ministry of Agriculture Ministry of Health

AGRICULTURAL INVESTMENT–GROWTH–POVERTY LINKAGES INDICATORS					
Expected Outcome	Indicator/definition	Disaggregation	Data	Methods	Suggested data Sources
Agricultural Investment leading to increased Agricultural Productivity	Percentage change in agricultural productivity Percentage change in agricultural investment	Agricultural investment in or by: - Function (research, extension, irrigation, farm support, etc.); sub-sector; major commodities; LASIP pillars; source (government, donors, private sector) Agricultural factor productivity in or by: - Sub-sector, major commodities	The data set is the same as for those shown in Agricultural Productivity, Investment and Growth as shown in the table above.	Impact assessment Program evaluation	Ministry of Agriculture LISGIS MOPEA Universities (UL/CU)
Agricultural Productivity leading to reduction in Poverty/ Hunger/ food and Nutrition Insecurity	Percentage change in <i>outcome</i> per unit change in agricultural factor productivity growth: - Poverty rate or number of poor people - Hunger rate or number of hungry people - Food and nutrition insecurity rate or number - of food and nutrition insecure people	Agricultural factor productivity in or by: - Sub-sector; major commodities Outcome by: - Gender; age group; sub-national location	The data set is the same as for those shown for Agricultural Productivity and Growth, Poverty Reduction and food Security as shown in the table above.	Impact assessment Program evaluation	Ministry of Agriculture LISGIS MOPEA Universities (UL/CU)
	Percentage change in <i>outcome</i> (i) per unit change in agricultural investment or (ii) per unit cost of intervention: - Poverty rate or number of poor people - Hunger rate or number of hungry people - Food and nutrition insecurity rate or number of food and nutrition insecure people	Agricultural investments in or by: - Function (research, extension, irrigation, farm support, etc.); sub-sector; major commodities; CAADP pillars; source (government, donors, private sector) Outcome by: - Gender; age group; sub-national location		Impact assessment Program evaluation	Ministry of Agriculture LISGIS MOPEA Universities (UL/CU)

Table 8: LASIP Results Framework

INDICATOR	Baseline	Target				
		PY1	PY2	PY3	PY4	PY5
FOOD AND NUTRITION SECURITY SUB-PROGRAM						
Volume of food production						
<i>Rice , MT</i>	231,800	288,000	373,000	420,000	513,000	615,000
<i>Cassava, MT</i>	550,000	716,000	1,090,000	1,532,000	2,042,000	2,180,000
<i>Maize, MT</i>	19,500	23,000	27,000	31,000	35,000	39,000
Volume of tree crop production						
<i>Rubber, MT</i>	105,500	110,000	120,000	130,000	150,000	200,000
<i>Cocoa, MT</i>	3,000	3,500	4,500	5,000	8,000	10,000
<i>Coffee, MT</i>	3,180	3,500	4,000	4,500	5,000	6,000
<i>Oil palm, MT</i>	183,000	210,000	250,000	300,000	350,000	500,000
No. of fertilizer distribution centers	2	5	8	14	20	30
Fertilizer consumption, MT	300	600	1,200	2400	5,000	6,000
% increase in fertilizer application rate/ha	0.5kg/ha	1	2	4	8	9
% children under 5 and lactating women with access to nutritionally balanced diet						
% change in post-harvest loss	30%	25%	20%	15%	10%	10%
% rural population with access to safe drinking water		40%	60%	70%	80%	80%
% rural population with access to rural housing		40%	60%	70%	80%	80%
Volume of marine fish catch, MT	16,245	18,000	20,000	22,000	25,000	30,000
No. of fish ponds						
Ha under fish pond						
No. of fish farmers						
Quantity of fish catch from aquaculture, MT	38.84	50	100	200	350	500
Animal population increased:						
<i>No. of heads of cattle</i>	38,000	45,600	55,000	66,000	79,200	95,000
<i>No. of heads of sheep</i>	230,340	276,000	300,000	360,000	400,000	480,000
<i>No. of heads of goats</i>	261,600	300,000	360,000	414,000	450,000	550,000
<i>No. of heads of pigs</i>	131,000	144,000	165,000	198,000	235,000	282,000
<i>No. of heads of poultry</i>	5,920,000	6,512,000	7,100,000	7,800,000	8,500,000	1,000,000
Carcass weight of cattle, kg	95kg	105	110	115	120	130
Carcass weight of sheep and goats, kg	9-11kg	12	13	15	15	15
Carcass weight of pigs, kg	24kg	30	35	40	45	45
Carcass weight of poultry, kg		1.3	1.5	2	2.2	2.2
Milk production of cattle increased, MT	0					

INDICATOR	Baseline	Target				
		PY1	PY2	PY3	PY4	PY5
No. of animal production centers established						
% participation of women participating in storage, processing, and marketing	TBD	50%	60%	70%	80%	80%
% participation of women in cash crop production and processing, fisheries, and forestry related downstream activities, such as furniture making	TBD	40%	50%	60%	70%	75%
% of women with access to land	TBD	30%	40%	50%	60%	70%
% of women with access to extension services	TBD	30%	40%	50%	60%	70%
% of women with access to farmer field schools	TBD	30%	40%	50%	60%	70%
% of youth engaged in agriculture	TBD	40%	50%	60%	70%	75%
Number of youth engaged in out grower or smallholder schemes	TBD	TBD	TBD	TBD	TBD	TBD
COMPETITIVE VALUE CHAINS AND MARKET LINKAGES PROGRAM						
No. of assessment reports of rural roads produced	No	1	1	1	1	1
Availability of policy document on construction, rehabilitation and maintenance of rural roads	No	Yes	Yes	Yes	Yes	Yes
No. of km of rural roads constructed	TBD	300	500	800	1,200	1,600
No. of markets constructed/rehabilitated	TBD	100	110	115	125	150
No. of slaughter houses	1	7	15	0	0	0
No. of cold storage facility		4	7	9	12	15
No. of storage facilities constructed	52	20	30	45	50	55
No. of processing facilities constructed/per district		30	36	40	50	60
No. of financial institutions involved in agricultural credit delivery	TBD	4	6	10	12	15
No. of cohesive farmer groups formed	TBD	64	70	80	90	100
No. of farmers in groups	TBD	1,280	1,400	1,600	1,800	2,000
Volume of credit made available to agricultural producers and FBOs	TBD					
% repayment of due loans	TBD	90%	90%	100%	100%	100%
Availability of agricultural mechanization strategy document	No	Yes	Yes	Yes	Yes	Yes
A well-functioning agricultural engineering unit in place	No	Yes	Yes	Yes	Yes	Yes
% farmers with access to information on intermediate technologies	TBD	30%	40%	50%	60%	70%
% farmers with access to intermediate technologies and devices	TBD	10%	15%	20%	25%	30%

INDICATOR	Baseline	Target				
		PY1	PY2	PY3	PY4	PY5
% of farmers with access to:						
<i>Credit, storage, and processing facilities</i>	TBD	10% increase over baseline	15% increase over baseline	20% increase over baseline	25% increase over baseline	30% increase over baseline
% of farmers linked to input and output markets	TBD	10% increase over baseline	15% increase over baseline	20% increase over baseline	25% increase over baseline	30% increase over baseline
% of farmers using high quality seeds, seedlings and fingerlings		30%	40%	50%	60%	70%
INSTITUTIONAL DEVELOPMENT						
No. of staff trained	TBD	50	60	70	80	90
No. of post -harvest management and processing technologies developed	TBD	TDB	TDB	TDB	TDB	TDB
No. of improved crop protection technologies developed	TBD	2	7	9	11	13
Technology dissemination policy available	TBD	Yes	Yes	Yes	Yes	Yes
% farmers reached by extension agents	TBD	50%	60%	70%	75%	80%
No. of radio broadcasts	TBD	180	240	360	360	360
No. of extension leaflets developed	TBD	20,000	30,000	40,000	50,000	60,000
No. of graduates produced from agricultural institutions	TBD	10	15	20	25	30
No. of farmer based organizations developed	TBD	50	75	100	125	125
No. of farmers involved in the FBOs	TBD	2,500	3,750	5,000	6,250	7,500

5.8 Sources of Data

At the heart of the M&E system is a set of processes in which a variety of stakeholders gather data, turn this data into useful information, and then use it to make action decisions. It is important that in analyzing data collected, the source of data is understood. In real life, data will be collected from more than one group of people. This makes it possible to compare data from various sources and check their reliability.

For the LASIP M&E system, various data sources have been identified for the various indicators. Data sources identified for LASIP include the following:

- MOA Statistics Unit reports
- LISGIS and Land and Water Resource/MOA reports
- Extension Department reports
- Reports of agencies involved in fertilizer distribution (e.g., FAO), private fertilizer distributors, and private plantations
- Quarterly reports of the MOA Crops Resources Division
- LISGIS/WFP records
- LISGIS socio-economic survey reports
- Agricultural survey reports
- Quarterly reports of the National Bureau of Fisheries
- Quarterly reports of the Livestock Division
- Quarterly reports of CACs
- Quarterly reports of MOPW Department of Feeder Roads
- Central Bank of Liberia
- Quarterly reports of the Cooperative Development Agency
- MOA technical department records
- NGO reports
- Training reports
- Varietals release committee reports
- Research reports of CARI
- Agricultural policy documentation
- Farmer survey reports
- Records of agricultural training institutions
- MOA Statistics Division food balance sheets
- MCI records
- Nutrition reports
- Survey reports
- MOHSW records.

5.9 Cost of LASIP M&E

The M&E system has to be seen within the context of institutionalization and political reform taking place within Liberia. The benefits of the program are defined by the usefulness of the

monitoring and evaluation for the CAADP continental, regional, and national policy-making, as well as decentralized planning at the county and district levels. These benefits are intangible, and therefore it is impossible to place a monetary value on their achievement over the period. However, putting in an effective cost mechanism for the M&E system will help proper planning and sequencing of M&E activities, thereby leading to overall improvement in the effective monitoring of LASIP.

The main result of the cost effective M&E system will include:

- Planning and Development Department capacities for technical backstopping in effective M&E strengthened;
- Capacities of departments of agriculture at national, county, and district levels in M&E techniques strengthened;
- Positive and effective linkages developed between the M&E Directorate and technical directorates, county and district offices, implementing agencies, and the private sector;
- Assessment of the quality and relevance of MOA services to beneficiaries improved;
- Provision of adequate, accurate, and timely data/information;
- Designated County M&E Officers for ensured effective supervision; and
- County and District Agricultural Offices keeping reliable and up-to-date data on their activities and performance.

The cost estimate for the LASIP M&E, with cost components over the five years, is shown in the Annex Table 8. A total amount that covers technical assistance, training, equipment, operational costs, and contingencies is estimated as US\$3,415,600.

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LIST OF TABLES

Annex Table 1: Liberia Selected Economic and Financial Indicators (2004–2008)

Annex Table 2: Liberia: Sectoral Origin of Gross Domestic Production

Annex Table 3: Employment by Industry (2006–2008)

Annex Table 4: Commodity Composition of Exports (2006–November 2008)

Annex Table 5: Commodity Composition of Imports (2006–November 2008)

Annex Table 6: Import of Meat Products, FY 2005/2006

Annex Table 7: Agricultural Land Capability

Annex Table 8: LASIP M&E Cost Estimates

LIST OF BOXES

Annex Box 1: Profiles of Investment by Agricultural Concessions

Annex Table 1: Liberia Selected Economic and Financial Indicators (2004–2008)

	2004 (EST.)	2005 (EST.)	2006 (EST.)	2007 (EST.)	2008 (EST.)
NATIONAL INCOME AND PRICES	(Annual Percent Change)				
Real GDP	2.6	5.3	7.8	9.5	7.1
Consumer prices (annual average)	3.6	6.9	7.2	11.4	17.0
National GDP (millions of US\$)	458.5	528.3	611.6	734.6	870.6
GDP deflator (US\$)	9.4	9.4	7.4	9.7	10.7
EXTERNAL SECTOR					
Export of goods	-1.4	6.3	41.7	28.6	24.9
Imports of goods	74.3	37.3	44.0	13.0	52.5
Terms of trade	4.9	3.9	49.7	-10.7	-2.6
Exchange rate (Liberian dollar per US\$, end of period)	54.5	56.5	59.5	62.5	...
MONEY AND BANKING (Liberian dollar terms)					
Reserve money*	31.4	27.2	23.9	26.7	24.2
Broad money**	49.3	35.7	34.4	40.1	43.1
CENTRAL GOVERNMENT	(Percent of GDP)				
Total revenue and grants	13.6	16.3	15.0	22.0	25.8
Of which: tax revenue	12.9	16.1	14.8	21.8	25.0
Total expenditure and net lending	11.6	15.5	12.9	18.3	24.6
Of which: current expenditures	10.8	13.3	11.8	15.8	21.6
Capital expenditure	0.9	2.2	1.1	2.5	3.0
Overall fiscal balance (cash basis)	2.0	0.8	2.1	3.8	1.2
EXTERNAL SECTOR					
Current account balance, including grants (deficit, -)	-19.4	-42.3	-30.3	-37.2	-40.0
Current account balance, excluding grants (deficit, -)	-169.7	-185.2	-216.2	-186.2	-160.7
Trade balance (deficit, -)	-25.2	-36.4	-45.7	-39.5	-57.4
Exports	23.4	21.6	26.5	28.3	29.9
Imports	-48.7	-58.0	-72.1	-67.9	-87.3
Public sector external debt outstanding (medium and long term)	988.6	876.8	822.8	571.0	400.7
	(Millions of US\$, unless otherwise indicated)				
External debt arrears	4,934	4,632	5,032	4,195	4,272
Current account balance including grants (deficits, -)	-89	-224	-185	-274	-349
Trade balance (deficit, -)	-116	-192	-279	-290	-500
Gross official reserves	5.3	7.8	46.2	89.3	96.4
Months of imports and goods and services	0.1	0.1	0.4	0.7	0.7
Source: IMF Article IV Consultation with Liberia, 2009.					
* Liberian dollar currency in circulation and commercial bank reserves (denominated in Liberian dollars) held at the CBL.					
** Liberian currency outside banks, plus demand, time, and savings deposits in Liberian and US\$.					

Annex Table 2: Liberia Sectoral Origin of Gross Domestic Production

SECTOR	2006	2007	2008
Agriculture & Fisheries	192.3	210.4	213.8
Rubber	35.3	38.6	31.2
Cocoa	1.3	1.4	0.1
Coffee	0.1	0.1	1.4
Rice	36.9	40.3	46.6
Cassava	42.0	46.0	49.0
Other	76.1	84.0	85.5
Forestry	74.1	81.1	97.5
Logs and Timber	0.0	0.0	18.9
Charcoal	74.1	81.1	78.6
Mining and Planning	0.7	0.8	0.8
Iron Ore	0.0	0.0	0.0
Other	0.7	0.8	0.8
Manufacturing	55.5	60.8	64.3
Cement	13.4	14.6	15.7
Beverage	38.7	42.3	44.7
Other			3.9
Services	110.5	120.9	130.7
Electricity and Water	3.0	3.3	3.8
Construction	11.3	12.3	16.1
Trade, Hotels, etc.	29.2	31.9	36.7
Transportation and Communication	30.9	33.8	34.8
Financial Institutions	10.8	11.8	11.9
Government Services	10.4	11.4	11.3
Other Services	14.9	16.3	16.2
Real Gross Domestic Product	433.2	473.9	507.1

Source: Central Bank of Liberia Annual Report, 2008.

Annex Table 3: Employment by Industry (2006–2008)*

INDUSTRY	2006	2007	2008
Agriculture and Forestry	12,200	33,672	176,326
General Merchandise/Wholesale/Retail Trade	43,500	36,633	18,928
Business Services	2,475	9,872	10,115
Social/Community Services	12,470	15,575	13,327
Manufacturing	1,045	5,813	2,785
Construction	535	987	4,300
Transportation and Communication	1,540	2,194	11,178
Mining	1,009	3,290	2,508
Banking & Insurance		1,645	8,206
GOL	58,500	31,900	47,681
Total Formal Sector	133,274	141,581	295,354
Informal Sector	470,000	480,000	487,000

* Estimates

Source: Central Bank of Liberia Annual Report, 2008.

Annex Table 4: Commodity Composition of Exports (2006–November 2008)
(US\$ Millions)*

COMMODITY	2006	2007	2008
Rubber	150.1	183.9	205.6
Cocoa Beans and Coffee	0.3	2.2	2.8
Iron Ore	1.0	0.5	1.5
Diamond	0.0	2.7	9.8
Gold	0.1	5.5	12.1
Logs	0.0	0.0	0.2
Other Commodities	6.4	5.4	6.8
Total	157.9	200.2	238.8
* Revised Source: Ministry of Commerce and Industries; Ministry of Land, Mines, and Energy, and Firestone Liberia.			

Annex Table 5: Commodity Composition of Imports (2006–November 2008)
(US\$ Millions)*

COMMODITY	2006	2007	Nov. 2008
Food and Live Animals	117.0	130.9	205.3
O/w: Rice	62.4	60.0	125.8
Beverages and Tobacco	13.7	15.7	10.1
Crude Materials	11.9	6.9	13.5
Minerals, Fuel, and Lubricants	10.6	5.7	12.7
Animals and Vegetable Oil	7.5	7.2	2.7
Chemicals and Related Products	23.6	20.4	36.4
Manufactured Products	48.7	70.7	99.3
Machinery and Transport Equipment	57.3	97.4	204.2
Petroleum Products	122.0	105.9	155.6
Miscellaneous Articles	54.4	40.6	58.0
Total	466.7	501.5	797.8
* Revised Source: CBL Annual Report, 2008.			

Annex Table 6: Import of Meat Products, FY 2005/2006

	QUANTITY (MT)	VALUE (US\$)
Frozen buffalo meat	56	47,600
Frozen beef	66	95,960
Frozen turkey wings	148	221,449
Frozen pig meat	690	524,886
Frozen chickens	1,893	1,464,135
Pigs' feet	8,082	378,339
Fresh eggs	10,834	3,173,883
Total	21,769	5,906,552
Source: Ministry of Commerce and Industry.		

Annex Table 7: Agricultural Land Capability

AGRO-ECOLOGY	DRAINAGE	CROP SUITABILITY	CONSTRAINTS	IMPROVEMENT MEASURES
TIDAL SWAMPS	Poor	Intensive lowland rice	High tide destroys crops	Adequate drainage
COASTAL BEECH PLAINS	Poor to well-drained	Unsuitable for most crops except cassava, coconut, oil palm	Low fertility, low organic matters	Fertility management
FLOOD PLAINS	Poor to well-drained	Cocoa, oil palm, upland rice, irrigated rice possible	Potential flooding	Proper timing of cropping activities, adequate drainage
VALLEY SWAMPS	Poor	Lowland rice	Water logging, low nutrient, low organic matters	Adequate drainage, fertility management
LOW HILLS	Well-drained; foot slopes poorly drained	Upland rice, vegetables, cassava	Low fertility, erosion	Fertility management adequate fallow

Source: CAAS-Lib Synthesis Report, 2007

Annex Table 8: M&E Cost Estimates
(US\$ Thousands)

INVESTMENT ITEM	UNIT COST	YEAR 1	YEAR 2	YEAR 3	YEAR 4	YEAR 5	TOTAL
Technical Assistance							
Periodic international technical assistance support to M&E Directorate (3 months/year)		40	30	30	30	20	150
Short-term, international technical assistance for database development (PY1) and evaluation of the M&E project implementation (PY2-3) (2 months/year)		30	20	20	15	10	95
Short-term, national		10	5	5	5	5	30
SUBTOTAL		80	55	55	50	35	275
Training							
Short courses @ US\$15,000 per officer	15	150	75	75	75	60	300
Long courses @ US\$30,000 per officer	30	90	60	60	30	30	210
Workshops, lump sum		60	60	40	30	30	220
Study tours, lump sum		40	30	30	30	20	150
SUBTOTAL		340	225	205	165	140	880
Equipment							
Cross-country vehicle	50	50	0	0	0	0	50
Double cabin pick-up (3 for Planning Department, 15 for counties)	30	540	0	0	0	0	540
Motorcycles (2/county)	4	120	0	0	0	0	120
Desktop computers and printers (5 for Planning Department, 1/county)	3	60	0	0	0	0	60
Laptop computers	3	30	0	0	0	0	30
Overhead LCD projectors (1 for Planning Department, 1/county)	3	48	0	0	0	0	48
Photocopiers	14	42	0	0	0	0	42
Air conditioners	2	10	0	0	0	0	10
Scanners	2	17	0	0	0	0	17

INVESTMENT ITEM	UNIT COST	YEAR 1	YEAR 2	YEAR 3	YEAR 4	YEAR 5	TOTAL
SUBTOTAL		917	0	0	0	0	917
Operational Costs							
Fuel @ 100 km/day/vehicle for 250 days/year @ 30km/gallon @ US\$4.0/gallon		53	53	53	53	53	265
Maintenance - 7% of cumulative vehicle cost		41	41	41	41	41	205
Operation and maintenance – equipment @ 10% of cumulative equipment cost		32.2	32.2	32.2	32.2	32.2	161
Consumables (stationery and materials), lump sum		50	50	50	50	50	250
Per diem and travels for 20 national and county officers @ US\$30 per diem for 25 days/quarter		60	60	60	60	60	300
SUBTOTAL		236.2	236.2	236.2	236.2	236.2	1181
Total Base Cost		1573.2	516.2	496.2	451.2	411.2	3253
Contingencies, 5%		78.66	25.81	24.81	22.56	20.56	162.65
Grand Total (Base Cost Contingencies)		1651.86	542.01	521.01	473.76	431.76	3415.65

Annex Box 1: Summary of Recent Investments by Agricultural Concessions

Until 2008, significant private investment in agriculture was in tree crops. This changed with the increase in international food prices. Although cash crops investment are dominant, investors are now looking favorably into the food sub-sector of Liberia not only for domestic markets, but also for regional and international markets. The review that follows profiles current investment activities by agricultural concessions.

- *Firestone Liberia* produces natural rubber in Margibi County. The company is implementing a business plan that calls for US\$185 million to be injected into its Liberian operations through 2015; some of this is being spent on a new rubber wood processing facility and increased social expenditure.
- The *Cavalla Rubber Plantation* produces natural rubber in Maryland County and is owned by Belgian and French interests. The GOL has sold its 50% stake in the company to the current investors, and negotiations are ongoing to convert the land lease into a concession agreement. The company's business plan calls for injection of US\$25 million over the next four to five years.
- *The Cocoa Plantation* produces natural rubber in Nimba County and is owned by the Liberia Company, whose majority shares are owned by American investors. Some investment is being made to improve social services, replant, and expand the plantation.
- The *Sinoe Rubber Corporation* also produces natural rubber in Sinoe County. Ownership of the plantation remains in doubt, and the plantation is now being managed by the locals and their authorities with plans for a takeover by central government authorities. No new investment has been made aside from attempts to maintain minimum operations.
- The *Guthrie Rubber Plantation* in Bomi County produces rubber, and its concession rights are owned by Sime Darby, a Malaysian company. Sime Darby has renegotiated the concession agreement that has been ratified by the national legislature, and the company plans to make an investment of over US\$800 million, mainly in oil palm cultivation and processing.
- The *Salala Rubber Corporation* is in Bong County and it produces rubber. In 2007, Salala merged with Weala, and the International Finance Corporation took an equity stake in the new company. New investment is unknown.

Other substantial investments in the agriculture sector by private entities are as follows:

- *African Development Aid* – This Libyan-backed venture plans to spend US\$30 million during the first phase of massive rice production in Foya, Lofa County, and Gbedin, Nimba County. It has obtained a concession agreement from government and initiated activities in Lofa.
- *NOVEL* – An international rice marketing firm with substantial interests in Liberia, this company received a concession agreement to cultivate 5,000 acres of rice in the Garwula Tombe area of Cape Mount County. Very little activity has taken place.
- *Equatorial Biofuels (EBF)/Liberia Incorporated (LIBINC)* – EBF obtained a concession agreement from the GOL for the rehabilitation and expansion of the Butaw Oil Palm Plantation in Sinoe County. It then merged with LIBINC in Palm Bay, Grand Bassa County. Initial investment amounts were US\$9.0 million for Butaw and US\$5.2 million for Palm Bay. Following the ratification of these two agreements by the legislature, LIBINC investors sold their interest to EBF, which now controls both entities.
- The GOL is currently engaged in renegotiating the concession agreement with the Liberia Agricultural Corporation, a producer and exporter of natural rubber located in Grand Bassa County and is far along in the competitive bidding process for management of the Decoris oil palm plantation in Maryland County.