



REPUBLIC OF LIBERIA

2010

LIBERIA AGRICULTURE SECTOR INVESTMENT PROGRAM (LASIP) REPORT

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

Monrovia, Liberia
May 31 2010

Table of Contents

Acronyms	iii
Executive Summary	v
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	14
1.2.4 Challenges and Opportunities	14
1.3 LASIP Development and Consultation Process	18
1.3.2 Evidence-Based Planning and Building Alliance for Investment	19
1.3.3 Program Design and Review	19
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 Energy Labor - Saving - Devices and Technologies	24
2.2.3 Sub-Program 3: Market and Enterprise Development	25
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 Selected Agricultural Parastatals and Improved Coordination	25
2.3.2 Sub-Program 2: Rebuilding Extension and Technology Dissemination and Adoption and Promoting and Strengthening Farm-based Organizations	26
2.3.3 Sub-Program 3: Revitalizing Agricultural Research	26
2.3.4 Sub-Program 4: Renewing Agricultural Education and Training	27
2.4 Program 4: Land and Water Development	28
2.4.1 Sub-Program 1: Land Policy Reform and Capacity Building	28
2.4.2 Sub-Program 2: Enhanced Land Husbandry	28
2.4.3 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	29
2.5.2 Environment	30

III. Financing the LASIP	33
3.1 Implementation Costs	33
3.1.1 Methodology	33
3.1.2 Results	37
3.2 Funding Sources	39
3.2.2 Donors	39
3.3 Gap Analysis	40
IV. Implementing the LASIP	41
4.1 Implementation Arrangements for LASIP	41
4.2 Programs	42
4.3 Sub-Programs	43
V. Organization and Implementation of the LASIP M&E System	49
5.1 Levels of Monitoring	49
5.2 Specific Roles and Responsibilities of Various Actors of the M&E Process	49
5.2.1 Roles and Responsibilities of the M&E Directorate	49
5.2.2. Roles and responsibilities of Directorates/Departments of MOA	51
5.2.3. Roles and Responsibilities of County Agricultural Offices in M&E	51
5.2.4. Roles and Responsibilities of District Agricultural Offices in M&E	51
5.2.5. Roles and Responsibilities of NGOs involved in agricultural Development at District and County levels in M&E	52
5.3 Communicating M&E Findings and Providing Feedback	52
5.4 Presentation of Performance Data	52
5.5 Indicators for LASIP	52
5.5.1 Practicality	53
5.5.2 Targeted	53
5.5.3 Independence	53
5.6 Sources of Data	58
5.7 Data Collection Methodologies	59
Annex	65

Acronyms

ACC	Agricultural Coordination Committee
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
CBL	Central Bank of Liberia
CDA	Cooperative Development Authority
CDC	County Development Steering Committee
CPO	Crude Palm Oil
ERR	Economic Rate of Return
FAO	Food and Agriculture Organization of the United Nations
FAPS	Food Agriculture Policy and Strategy
FBO	Farmer-Based Organization
FDA	Forestry Development Authority
FSNTC	Food Security and Nutrition Technical Committee
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
IFIs	International Financial Institutions
IMF	International Monetary Fund
iPRS	Interim Poverty Reduction Strategy
LASIP	Liberia Agriculture Sector Investment Program
LCCC	Liberia Cocoa and Coffee Corporation
LMA	Liberia Market Association
LPMC	Liberia Produce Marketing Corporation
LPPC	Liberia Palm Products 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 Goals
MFI	Microfinance Institution
MIA	Ministry of Internal Affairs
MOA	Ministry of Agriculture
MOF	Ministry of Finance
MOGD	Ministry of Gender and Development
MOPEA	Ministry of Planning and Economic Affairs
MOPW	Ministry of Public Works
MT	Metric Ton
MSY	Maximum Sustainable Yield
NEPAD	New Partnership for Agricultural Development (African Union)
NFSNS	National Food Security and Nutrition Strategy
NGO	Nongovernmental Organization
NIC	National Investment Commission
NMTIP	National Medium Term Implementation Program (NEPAD)
NPC	National Palm Corporation

PEA	Participatory Extension Approaches
PMU	Project Management Unit
PPP	Public-Private Partnership
PRC	People's Republic of China
PRS	Poverty Reduction Strategy
SIDA	Swedish International Development Cooperation Agency
SME	Small and Medium Enterprise
SWOT	Strength-Weakness-Opportunity-Threat
UL	University of Liberia
UN	United Nations
UNDP	United Nations Development Program
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 Program (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 169th 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 compared to 29% of men)^{3/} remain social issues such as land property rights.

1/ 2009 UNDP Human Development Report, UNDP, 2010.

2/ 2007 National Health Policy and Plan, Ministry of Health, 2008

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

Liberia recognizes agriculture as a strategic sector because approximately 70% of its population depends on agriculture for its 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 faster.

The GOL and 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."^{4/} Thus, Liberia's national policy objectives are aligned with both CAADP's Goal and the Millennium Development Goal (MDG) of reducing hunger and poverty.

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). Decline in 2009 is on account of 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.^{5/} Unemployment was widespread: in 2008 only 295,354 persons in a labor force estimated to be 1 million had jobs, with agriculture and forestry accounting for 60% of that quantum. Poverty remains a challenge. It is estimated that at least two-thirds of Liberians live in poverty, that is, on less than one United States dollar per day.

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 and the agricultural labor force.

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

Major challenges include weak land management and water control systems; limited 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

^{4/} Republic of Liberia. 2006. Liberia Interim Poverty Reduction Strategy.

^{5/} 2009 UNDP Human Development Report, UNDP, 2010.

of the policy environment for agriculture including 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 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 (LPMC), 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

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

Private Sector-oriented Investment Sub-programs. The Food Agriculture Policy and Strategy (FAPS) recognizes the priority of the private sector in the productive sector while the government play the role of regulator and promoter for growth providing 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 (those with 15 acres or less).

For commercial investors, Liberia has a “one stop shop” process in which taxation and land constraints are handled by the National Investment Commission (NIC). This institution manages s constraints of investors and provides the forum where all GOL institutions participate in the process.

The GOL has concluded several concession agreements with various commercial investors for development of targeted sub-sectors within the agriculture sector. Investor focus is now changing from rubber to other sub-sectors such as rice, palm oil, cocoa, coffee, and bananas. The private sector investments in Liberia as of March 2010 are as follows: around 230,000 hectares (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 & FORESTRY

(As of March 2010 US\$ Dollars)

No	NAME	ACREAGE	INVESTMENT NIC
1	PALM OIL		
	Total	549,295 acres	848 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		1,078.0 million

Source: National Investment Commission, March 2010

Presently, private commercial sector investment represents over 800,000 ha and 40 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 a validation workshop, LASIP programs and sub-programs have been reordered to reflect priorities consistent with reduction of hunger and poverty in Pillar 2 the PRS.

Program 1: Food and Nutrition Security

Food availability, accessibility, and utilization are major challenges on account of low production and productivity, bad road conditions, high post-harvest losses, low levels of incomes, 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, there are 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, targeting the shift to low land production with more women producers. It aims to achieve the goal of the National Food Security and Nutrition Strategy (NFSNS) 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; Smallholder Tree Crops and Agro-forestry Development; Sustainable Fisheries Subsector 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 Liberia farmers to be food secure, graduate from emergency food aid, and meet the World Bank Threshold of Poverty by 2015, allowing Liberia to address its MDG goals.

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 (MRU) and Economic Community of West African States pursued.

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

Program 2 will allow Liberia farmers and SMEs to be linked to the 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 limitation of trained staff and resources. The MOA carried out an assessment on 2008, and proposals for change submitted to the Governance Commission emerged on 2009.^{6j}

CARI 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 supply-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 (LPMC), the Liberia Rubber Development Authority (LRDA), the Cooperative Development Authority (CDA), and the Agricultural Cooperative Development Bank (ACDB), are

^{6j} “Assessment and Institutional Reform at the MOA,” MOA, Monrovia 2009

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 (GC) 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 selected Agricultural Parastatals; Revitalizing Agricultural Research; Technology Dissemination and Adoption; Renewing Agricultural Education and Training; Promoting and Strengthening Farm-based Organizations; and Improved Coordination and Management*. This area needs more investment proposals, as there is still only a small number of projects to help boost the capacity for implementation. The gap is estimated at US 111 million.

Program 3 will allow Liberian farmers to be served by an efficient and diverse extension services, including MOA, NGOs, and others, while disseminating information on production and marketing to include transfer of improved technologies.

Program 4: Land and Water Resources Development

The objective of this sub-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 sub-program components: *Land Policy Reform and Capacity Building; Enhanced Land Husbandry; Expansion of Irrigable Land; and Improved Wet and Degraded Land Management*. The indicative cost is estimated at US\$ 104 million and the gap estimated at US\$ 100 million.

Program 4 will allow a framework for moving smallholders from upland cropping systems to the lowlands for improvement in crop productivity, as well as investment opportunities for medium- to large-scale private sector investors.

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 Table ???. Table data is presented in the following columns:

- **Column (1): Already funded** programs and projects
- **Column (2): New Investment in the Agriculture sector** that have been identified (programs and projects that have feasibility studies which funding is committed or those without funding).
- **Column (3): Gap:** Column 2 – Column 1. This shows the Gap or needed investment for 2011–2015 period.

The actual/ongoing 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 to actual implementation plans.

**Table 2 SUMMARY OF LASIP FOR 2011–2015
(5-Year Program)**

SUMMARY of LASIP (LIBERIAN AGRICULTURE INVESTMENT PROGRAMS) PLAN COSTS									
2011 – 2015									
Program 1: Food & Nutrition	Already Funded (1)	New Invest ment (2)	Funding Gap (3)	Year 1	Year 2	Year 3	Year 4	Year 5	Total
Sub Program 1. Food Production and Productivity Enhancement	54	212	158	15.8	31.6	47.8	31.6	31.6	158.4
Sub Program 2.. Improved Nutritional Status and Management of Food Emergency	25.5	115	89.5	8.95	17.9	26.85	17.9	17.9	89.5
Sub Program 3. Smallholder Tree Crop	18.2	51.8	33.6	3.36	6.72	10.08	6.72	6.72	33.6
Sub Program 4. Sustainable Fisheries	12	22	10	1	2	3	2	2	10
Sub Program 5 Livestock Development	1.1	11.1	10	1	2	3	2	2	10
Sub Program 6 Women and Youth	3	10	7	0.7	1.4	2.1	1.4	1.4	7
Sub total	113.8	421.9	308.1	30.81	61.62	92.83	61.62	61.62	
Program 2: Competitive Value Chain and Linkages									
Sub Program 1. Rehabilitation and Expansion of Rural Roads	20.145	170.64	150.5	30.1	30.1	30.1	30.1	30.1	150.5
Sub Program 2. Rural Ag. Infrastructure & Labor Saving Technologies	3.5	25	21.5	4.3	4.3	4.3	4.3	4.3	21.5
Sub Program 3: Rural Agriculture Infrastructure & Technology	19.47	49.47	30	6	6	6	6	6	30
Sub Program 4. Market and Enterprise Development	8.61	18.61	10	2	2	2	2	2	10
Sub Program 5. Rural Finance Services	0	40	40	8	8	8	8	8	40
Sub-total	51.725	303.7	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	6.9	23.4	16.5	3.3	4.95	4.125	2.47	1.65	16.5

Management									5
Sub Program 2 : Reviewing and upgrading Selected Parastatals		6	6	1.2	1.8	1.5	0.9	0.6	6
Sub Program 3: Building Extension and Enhancing Technologies							2.17		
		14.5	14.5	2.9	4.35	3.625	5	1.45	
Sub Program 4 : Capacity Building of Farm based Organizations		3	3	0.6	0.9	0.75	0.45	0.3	3
Sub Program 5: Revitalizing Agriculture Research		40	40	8	12	10	6	4	40
Sub Program 6: Agriculture Education and Training							4.72		
		31.5	31.5	6.3	9.45	7.875	5	3.15	31.5
					33.4		16.7	11.1	
Sub-total	6.9	118.4	111.5	22.3	5	27.875	25	5	
Program 4: Land and Water Management									
Sub Program 1: Land Reform and Capacity Building		3	12	9	1.8	2.7	2.7	0.9	0.9
Sub Program 2 : Enhanced Land Husbandry						11.1			
		37.2	37.2	7.44	6	11.16	3.72	3.72	37.2
Sub Program 3: Expansion of Irrigated Land		11.5	11.5	2.3	2.3	2.3	2.3	2.3	11.5
Sub Program 4: Improved Land Management		43	43	8.6	12.9	8.6	8.6	4.3	43
					29.0		15.5	11.2	
Sub-total	3	103.7	100.7	20.14	6	24.76	2	2	
TOTAL	175.42	5	947.7	772.3	123.6	5	195.8	2	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 will be headed by the President of Liberia.
- A national *Stakeholders' Forum* will be held periodically for the purposes of sharing information and experiences about the investment program implementation.
- The *Food Security and Nutrition Technical Committee (FSNTC)* will be the highest sectoral-level decision-making body. The FSNTC will be chaired by the Minister of Agriculture and will include 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.
- *Agricultural Coordination Committee (ACC) and Donors' Forum*: The ACC will provide technical assistance in management of the investment programs. The MOA will prepare annual plans drawing from elements of the investment priorities for resource mobilization, allocation and utilization. The Donors' Forum 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* 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, and develop annual plans, as well as participate in the monitoring and evaluation of investment activities.

LASIP coordination and leadership will rest with the MOA. The LASIP management team will comprise 5 persons (1 Coordinator and 4 program managers) and support staff will be based at the MOA's Project Management Unit (PMU, see below).

Other Implementation Modalities

The GOL has strengthened 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, immediately following the CAADP/Donors roundtable, undertake consultations to commit and align funding to LASIP. 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:**
 - 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.
 - Investments are sequenced in order to maximize impact.
- **At the project level:**
 - Cost benefit analysis has been conducted.
 - Capacity building factors have been included to assure sustainability.
 - Inclusion of market linkages and capacity development for private sector, 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 a small portion by the MOA.

Financial Management

Financial management at the Ministry of Finance (national level) is improving with installation of the Liberia Public Management Act of 2009.

Liberia belongs to the Heavily Indebted Poor Countries Initiative, and the country is under the close “macroeconomic framework” supervision of the International Monetary Fund (IMF). Liberia is expected to get the International Financial Institutions (IFIs’) approval by July of 2010.

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. This new financial system will help MOA to manage additional investment programs for the agriculture sector.

Monitoring and Evaluation

An MOA monitoring and evaluation (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 impacts.

The M&E will operate at two levels:

At **national level**, LASIP will work with the Ministry of Planning and Economic Affairs (MOPEA) and report to the Cabinet, the Stakeholders’ Forum, a national consultative forum of all stakeholders and the cabinet and the County Development Steering Committee.

At the **project level**, the M&E unit will report to the MOA, the FSNTC, and the ACC that combined encompass all stakeholders in the rural sector.

I. Background

Liberia is successfully transitioning away from nearly a quarter 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 a 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. *Improve national food and nutrition security:* Increase food availability and production to spur local economic development.
2. *Enhance agricultural productivity, competitiveness, and linkages to markets:* 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. *Strengthen human and institutional capacities:* Institutionalize improved governance; strengthen civil society organizations; encourage demand-driven

^{7/} Food & Agriculture Policy and Strategy, MOA, July 2008.

service delivery; establish effective and efficient public sector frameworks in agricultural 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 Program (CAADP) will be developed. LASIP 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 promoting the small farmer sector.

- I. 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, 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.

Major donors, including the United States Agency for International Development (USAID), United Kingdom Department for International Development, Swedish International Development Cooperation Agency (SIDA), 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. US\$20 billion over the next three years has been pledged toward this end.

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 Program: 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, whereby a wide-range of stakeholders from government ministries, the private sector, NGOs, and civil society provided input into LASIP review and revisions were held on May 18 and

on May 21, 2010. Results of Workshops were incorporated into the revised LASIP and a final Validation Workshop was held on May 28, 2010.

This report starts with a brief description of conditions in Liberia. Agriculture sector issues are discussed. How LASIP was developed is highlighted followed by details of priority areas for investment and 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 was 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 which emphasizes strong and fiscal and monetary objectives. Liberia successfully achieved these objectives through the end of 2009. The GOL expects to reach the HIPC "completion point" in June 2010, thus qualifying for debt forgiveness and access to loan facilities through the IFI's. The government also commenced implementation of a validated domestic debt payment strategy.

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 to 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 century of civil war and political instability. Sixty-four% of its nearly 3.5 million people, equally divided between males and females, are poor; the per capita GDP of US\$132 in 2008 (World Bank) rose to only US\$362 in 2009, and Liberia is ranked 169 out of 182 countries in the United Nations Development Program (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 about every second household having 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 NSFNS, 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 an inclusive and private sector led growth while it concentrates on providing infrastructures for the functioning of the market system and supporting vulnerable farmers while improving food security for the entire population.

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 must 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 of acutely undernourished children and meeting the food and nutrition needs of those affected by HIV; improving nutritional caring practices and fortifying foods with micronutrients; and enforcing food standards, diversifying diets, and increasing 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. Recent increases in global food prices in 2008 and 2009 economic meltdown present both threats and opportunities for Liberia. The FAPS was developed within the context of the Lift Liberia PRS, 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 the 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. "...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..." A comprehensive strategy requires action on three fronts:

1. To mitigate the impact, as far as possible, of domestic price rises and ensure consistent supply;
2. To maintain access to food and improved nutritional well-being for vulnerable populations through safety nets; and
3. To promote 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 are cultivating 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 providing 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.

^{8/} "Liberia Response to Food Crisis," MOA, June 2008, page 1.

Rice is the staple food with annual per capita consumption of 53 kilograms. 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/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 in recent years have been about 3,900 kg/ha for paddy rice, while in sub-Saharan Africa yields have recently averaged about 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 hectares (ha), and yields are estimated to be between 6 and 10 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 GDP in 2005 and 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 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 and 200 kilograms per hectare; those 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 Cote d'Ivoire.

Oil palm is an essential tree crop for smallholders. Liberia's pre-war output of 135,000 to 170,000 metric tons of crude palm oil (CPO) has fallen to about 35,000 tons. 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 to 3,000 tons) is exported to neighboring countries through informal border trade. It is estimated that there may be about 25,000 hectares 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 tons 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-km coastline and continental shelf that 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 such as 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% 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 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 three% 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 m 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 moved from emergency relief to rebuilding after 14 years of conflict. The legitimacy of the GOL rests on a functional and vibrant "inclusive" agriculture sector.

However, Liberia was affected in FY2008/2009 by the international food price crisis. In response to the crisis challenges, the MOA seeks to respond and to take a leadership role in the rural sector, in accordance with GOL policies. Challenges^{9/} that face the MOA include 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/} "Assessment and Institutional Reform at MOA," MOA, March 2009.

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 has been 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.

The MOA's staffing weaknesses are noted below:

- The MOA is understaffed technically and overstaffed administratively.
- 75% of 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 in many districts the ministry is absent.
- Most of the existing staff are computer illiterate and over 50 years old.
- Staff lacks means with which to operate (i.e., lack of computers, electricity power, and office space), while extension agents are constrained by a host of issues (e.g., lack of transportation, low salaries, and technical skills..
- The functions of the Ministry of Internal Affairs (MOIA) and MOA are duplicated. MOIA has extension workers in the same areas/fields and at times in the same counties as the MOA.
- The MOA lacks the necessary budget (operating and investment) and has to rely on donors and nongovernmental organizations (NGOs).
- Many districts have no MOA extension service (replaced de-facto by NGOs).
- The MOA is almost absent in the area of agricultural research and non-existent in the quarantine of agricultural products.
- There is no MOA information management system and weak systems for communicating with the general public.
- The existing financial management system is ill-equipped to produce timely financial information.
- The performance management system is weak and thus there is limited follow-up on discipline and professional behavior.

In effect, the MOA conducts its affairs with “few capable senior officers followed by [a few more] unqualified and non-operational staff in the field” supported by NGOs. The MOA is currently functioning in a crisis mode. The gap between capacity and needs is wide. The MOA needs significant investment in the form of logistic support, organizational 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 will achieve the above objectives by focusing on planning and policy development, applied research, and extension services. It is organized at the headquarters level into four major departments: Planning and Development; Rural Development, Research, and Extension; Technical Services; and Administration.

The Planning and Development Department is responsible for planning and policy analysis, M&E, statistics, and program coordination. Technical Services 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 the responsibility of 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 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 (BWI)* 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 (GC) 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 transition 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)*, *Ministry of Commerce and Industry (MOCI)*, and the *Ministry of Finance (MOF)* are important government institutions. MIA coordinates local government administration and in so doing promotes and encourages farming. MCI has a mandate to formulate, implement, and review policies and legislations for small and medium enterprises (SMEs), including agricultural-based processing enterprises. 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 to 5% of commodity, insurance and freight(CIF) value. Agricultural machinery such as tractors are subject to higher duties of 10 to 25%, and implements like hammers and wheelbarrows are taxed as building materials of 5 to 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 (ASRP) 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 while the entire secondary road network (2,504 km). 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 having 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 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, with an average age of 8–10 years.

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, and 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).

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.

Investment in the private sector includes around 230,000 ha in palm oil, 435,000 ha in rubber, 17,000 ha in rice, 1,000,000 ha in Forest Management Contracts, of which about 20,000 ha were issued as timber sales contracts.

PRIVATE SECTOR CONCESSIONS IN AGRICULTURE & FORESTRY

(As of March 2010 US\$ Million)

No	NAME	ACREAGE	INVESTMENT NIC
1	PALM OIL		
	Total	549,295 acres	\$ 848 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		\$1,078.0 million

Source: National Investment Commission, March 2010

Presently, private commercial sector investment represents over 800,000 ha and 40,000 to 60,000 formal jobs. The private commercial sector will provide income for the GOL, and the government is confident that private sector-led growth will bear fruit in the upcoming years and that its PPP approach will be successful.

(Note: paragraph will be added)

The public sector under LASIP will concentrate on smallholder farmers and women, rebuilding infrastructure and agriculture services. Investment programs and sub-programs have been identified and grouped according to the CAADP common framework and the GOL’s priorities. Government in its support to LASIP will focus on food and nutrition sub-programs enhanced by building rural infrastructure and improving crop value chains including land and water development.

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 subsector, remain absent in the traditional, subsistence food-producing subsector.

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. But these resources have to be harnessed by appropriate policy, legal, and investment environments. Issues regarding property rights (e.g., access to land, security of tenure, and the utilization of land) linger, 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, providing 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.

Outmoded agricultural research and technology dissemination systems should adopt people-centered, participatory methods – Liberia needs to reframe its agricultural institutions, particularly the MOA and the Central Agricultural Research Institute, and improve the education and health delivery systems to boost smallholder productivity and reduce poverty. Many African countries are changing their approaches to agricultural research to include participatory, demand-driven systems that combine farmers' indigenous traditional knowledge with the expertise of agricultural research systems. The approach also allows for the active involvement of farmers or users in setting the research agenda, implementing 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.

This change in paradigm should be welcomed by Liberia, whose agricultural research 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 programs, and resource mobilization efforts that are prioritized to re-launch and rationalize the national research system as soon as possible.

Recent extension approaches such as agricultural advisory services and farmers' field schools have greatly facilitated producers' involvement 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.

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

1. *Public 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 to agriculture credit that requires medium-term funding.

3. *Openness in international trade relations should be maintained.* 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.
4. *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 which 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 keys 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, to sign a compact which commits representatives of twelve organizations to endorse and commit to implementation of the LASIP process. The program 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 following processes:

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), Economic Community of West African States (ECOWAS),

and the African Union (AU). Every stage in the development of LASIP was consultative and validated to encourage and ensure a broad participation and 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 further consultations with stakeholders. Since the roundtable discussion and compact signing ceremonies, LASIP has gone through further analyses and reviews that, together with roundtable feedback, have strengthened LASIP in areas such as the sequencing of investment priorities and cost of the investment programs.

II LASIP Priority Programs and Sub-Programs

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 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. 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 towards achieving MDG. The effort will be centered around rice, cassava, and vegetables. Effort in the rice sub-sector will follow the Liberia National Rice Development Strategy^{10/} and will be coordinated within the Mano River Union programs..

Activities:

- (i) Promote policies towards the reduction of distribution of free food and inputs.
- (ii) Start and enhance the rice seed production through the private sector for a sustainable rice development strategy.
- (iii) Improve production knowledge and skills, planting materials, and other inputs and expand application of integrated plant nutrients and pest management methods aiming 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 crops including vegetables other than rice and cassava.
- (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

^{10/}Liberia National Rice Development Strategy, MOA, March 2009

coordinated with other ministries including Gender, Health and Education and international institutions in particular WFP and UNICEF.

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 collaboration 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 forestry-sub sector by 50% between 2011 and 2015. This initiative is linked to the nutrition and will enhance the income of the rural population.

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. Efforts have been launched to restart the capacity of the Bureau of Fisheries to allow various sub-programs to be operational.

Activities:

- (i) Improve operational capacity of Bureau of 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. Activities in re-stocking and animal health should become operational again.

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. Best practices indicate that selected positions could be privatized.
- (iii) Strengthen coordination between MOA and other agencies (such as the Ministry of Health and Social Welfare and 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. The program has been working in three counties as a first test, and the MOA and UNDP should expand it into newer areas.

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 youths, 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 to effectively link them to domestic, regional, and international markets through favorable policies and programs.

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) for five main food producing counties that are of major importance to agriculture in 2011–2015. This program will be feasible with additional funding and the trust in rehabilitating rural roads for access. This program will be carried in coordination with the Ministry of Public Works (MOPW) and other implementing stakeholders such as NGOs and the International Labour Organization.

Activities:

- (i) Conduct assessment of 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) Coordinate between MOA, MOPW, and decentralized governments and implementing agencies to prioritize and maintain rural roads.

2.2.2 Sub-Program 2: Rural Agricultural Infrastructure and Energy Labor - Saving - Devices and Technologies

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. 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 and 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 bring 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 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.

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

2.3.1 Sub-Program 1: Rebuilding the Ministry of Agriculture and Selected Agricultural Parastatals and Improved Coordination

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

Activities:

- (i) Clarify roles, responsibilities and relationships of the Ministry of Agriculture 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) Establish and strengthen the Project Coordination Unit at the Ministry of Agriculture;
- (iv) Establish appropriate monitoring, evaluation and reporting systems; and
- (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) Assess and redefine the roles of agricultural parastatals and develop appropriate legislation and institutional arrangements; and
- (vii) 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: Rebuilding Extension and Technology Dissemination and Adoption and Promoting and Strengthening Farm-based Organizations

Target: To build capacity and transform the national extension service into a decentralized, demand-driven farm advisory system in three years, and to build the capacity of at least 10 FBOs in each county.

Activities:

- (i) Rebuild and expand the capacity of the national extension service.
- (ii) Promulgate a technology dissemination 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) Undertake a comprehensive assessment of the performance of FBOs to date.
- (vi) Formulate appropriate strategies and institutional arrangements.
- (vii) Rebuild selected farmer based organizations (FBOs).
- (viii) Strengthen the CDA and other apex organizations.

2.3.3 Sub-Program 3: Revitalizing Agricultural Research

Target: To rebuild CARI to its pre-war status and implement a participatory, demand-driven agricultural research paradigm for the next 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 resource 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.

2.3.4 Sub-Program 4: 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. (add sub-program descriptions from old LASIP).

2.3.5 Sub-Program 5: Promoting and Strengthening Farm-based Organizations

Target: To build the capacity of at least 10 farm-based organizations in each county and strengthen the Cooperative Development Agency.

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; and
- (iv) Strengthen the Cooperative Development Agency and other apex organizations.

2.3.6 Sub-Program 6: Improved Coordination and Management

Target: To enhance sector and inter-agency coordination and program management.

Activities:

- (i) Establish and strengthen the Project Coordination Unit at the Ministry of

Agriculture;

- (ii) Establish appropriate monitoring, evaluation and reporting systems; and
- (iii) 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.

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. (see notes from CAADP validation workshop)

2.4.1 Sub-Program 1: Land Policy Reform and Capacity Building

Target: Consistent with reforms emanating from deliberations of the Land Commission, to ensure that statutes and policies regarding ownership as well as tenure of land 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 0.2% 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) The Technical Services Department of the MOA needs to be reconstituted. Liberia is moving from emergency to rebuilding, so infrastructure in water and land management needs to be rebuilt.

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 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, 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 ha 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 the performance of the sector 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

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 Environment

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 legislations 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, private sector and concerned government organizations; and
- Support climate change-related research, education, and training.

III. Financing the LASIP

During the Second Ordinary Session of the African Union, held in Maputo in July 2003, the heads of state “... allocate 10% of national budgetary resources for the implementation of CAADP... and sound policies for agricultural and rural development within five years.” 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; 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, MOA was allocated US\$ 3.1 million, US\$ 3.8 million, and US\$ 7.0 million (See Table 6.1), representing budget shares of 2.0%, 1.8%, and 2.3% respectively.

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.

Table 3.1. MOA Budget Execution

	FY2005/2006	2006/2007	2007/2008	2008/2009	2009/2010*
MOA Budget	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%	
MOA Controller’s Office; *provisional data					

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. 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.

3.1 Implementation Costs

3.1.1 Methodology

LASIP is to be an incrementally funded investment program and as such, LASIP is to be funded and implemented step-by step. A summary of the LASIP public sector sub-program is presented in Table 3.1. Table data is presented in the following columns:

- **Column (1): Already funded/Ongoing:** Programs and projects that have funding and operational
- **Column (2): New Investment:** Programs and projects that are needed for the agricultural sector that have been identified (programs and projects that have feasibility studies but have not found funding).
- **Column (3): Gap:** Column 3 – (Column 1+2). This shows the needed investment for 2011–2015 period.

**Table 3.2 SUMMARY OF LASIP FOR 2011–2015
(5-Year Program)**

2011 – 2015				
Program 1: Food & Nutrition	Already Funded (1)	New Investment (2)	Funding Gap (3)	Total
Sub Program 1. Food Production and Productivity Enhancement	54	212	158	158.4
Sub Program 2. Improved Nutritional Status and Management of Food Emergency	25.5	115	89.5	89.5
Sub Program 3. Smallholder Tree Crop	18.2	51.8	33.6	33.6
Sub Program 4. Sustainable Fisheries	12	22	10	10
Sub Program 5 Livestock Development	1.1	11.1	10	10
Sub Program 6 Women and Youth	3	10	7	7
Sub total	113.8	421.9	308.1	
Program 2: Competitive Value Chain and Linkages				
Sub Program 1. Rehabilitation and Expansion of Rural Roads	20.145	170.645	150.5	150.5
Sub Program 2. Rural Ag. Infrastructure & Labor Saving Technologies	3.5	25	21.5	21.5
Sub Program 3: Rural Agriculture Infrastructure & Technology	19.47	49.47	30	30
Sub Program 4. Market and Enterprise Development	8.61	18.61	10	10
Sub Program 5. Rural Finance Services	0	40	40	40
Sub-total	51.725	303.725	252	
Program 3: Institutional Development				
Sub Program 1: Rebuilding the MOA and Improved Coordination and Management	6.9	23.4	16.5	16.5
Sub Program 2 : Reviewing and upgrading Selected Parastatals		6	6	6
Sub Program 3: Building Extension and Enhancing Technologies		14.5	14.5	
Sub Program 4 : Capacity Building of Farm based Organizations		3	3	3
Sub Program 5: Revitalizing Agriculture Research		40	40	40
Sub Program 6: Agriculture Education and Training		31.5	31.5	31.5
Sub-total	6.9	118.4	111.5	
Program 4: Land and Water Management				
Sub Program 1: Land Reform and Capacity Building	3	12	9	9
Sub Program 2 : Enhanced Land Husbandry		37.2	37.2	37.2
Sub Program 3: Expansion of Irrigated Land		11.5	11.5	11.5
Sub Program 4: Improved Land Management		43	43	43
Sub-total	3	103.7	100.7	
TOTAL	175.425	947.725	772.3	

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 MOA's 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 cost of private sector is not included; however, selected projects implemented by the public sector do include a component on private sector capacity building.

Cost Benefit Analysis (CBA)

To select and prioritize LASIP programs, MOA follows specific steps: 1) conducts a SWOT (Strength, Weakness, Opportunity, Threat) analysis for value chain; and 2) determine financial and economic rate of return (ERR).

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

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 46% 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 land. Proper land and water management for increased production and productivity will mean cropping two or more time in one production. It requires intensification investment in infrastructure, land, and water management and the use of inputs.

The case of the Agriculture Sector Rehabilitation Project (ASRP) is important to note. Financial analysis of the ASRP shows that the average annual net income of beneficiary farm households generated from crop sales could increase from \$US130 without the project to roughly \$USD568 by 2013. The income increase results from the improved production technologies and expanded area 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, and the use 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 area (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)^{11/} 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%.

^{11/} "Liberia Agriculture Rehabilitation report" AfDB, April 2009, Volume II (Technical Annex B6).

The EIRR rate was high in an “under-served” region of the South East with few roads and infrastructure. Thus, investment in those 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 Security, receives the highest priority while Program 2, Competitive Value Chains and Market Linkages, receives the second highest priority (as Liberia imported over \$US 200 million in 2009 for its rice).

Rural Roads and Infrastructure

Presently the MOPW implements the 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 operating in the rural sector. The program does not include roads build 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 + large bridge repairs, etc. @ 47,000/km.
- National highway, bridge repairs, gravel resurfacing, etc. @ \$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 \$75,000/km including design and supervision.

The rebuilding/rehabilitation of 100km/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/year increasing slowly to 300km/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 justifying feeder roads to 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.

3.1.2 Results

See table (above)

LASIP is composed of four main programs: Food and Nutrition, Value Chain and Market Linkages, Institutional Development, and Land and Water Management

Program 1 is composed of the following sub-programs:

- Food production and productivity enhancement: Composed of various projects under this sub program include inputs for agriculture, seed banks, and vegetable-horticulture. Health: To expand in the low land areas, a health program—a pilot project in Nimba and a National Program for Schistosomiasis— must accompany the agriculture sector to alleviate health concerns. This program will be placed in the Land & Water Management sub program
- Tree crops. Includes the present Sustainable Tree Crop Program (STCP), cocoa, palm oil, and World Bank-funded project in this area. These projects include inputs and capacity building in those sub-sectors
- Sustainable fisheries. Composed of two projects: a Feasibility Study (FS) from NEPAD that includes aquaculture and the West African project. The WAAP is expected to start in 2011. The WAAP is funded by the World Bank on a regional basis, with the goal to build the capacity of the Bureau of Fisheries to police and to strengthen its regulatory capacity.
- Livestock Development. Composed of two projects: the SPINAP/avian flu and a FS from NEPAD. The livestock sub-program has only one small project in Avian flu.
- Women and youth: The Danish -UN-Joint Program aims at enhancing the capacity of women. The needs for this program is to help it to continue through 2015.

Program 2 composed of the following sub-programs:

- Rehabilitation and expansion of rural roads. The assumption is that 300 km could be built each year depending on funding. Other assumptions include all good weather farm to market roads.
- Rural Infrastructure and Energy. Includes rural electrification and other infrastructure to render work more efficient, including the use of new technologies and innovations.
- Market and enterprise development. Includes promotion of the commercialization of food crops and the use of technologies for increased efficiency.
- Rural finance: Aims to fund SMEs to help rehabilitate and develop commercial farming.

Program 3 is composed of the following sub-programs:

- Rebuilding MOA. There is a need to build capacity for selected departments to support LASIP.
- Rebuilding and upgrading selected parastatals. Composed of an assessment study and some investment in the CDA and LPMC (new version).
- Building extension and enhancing technologies. Includes promoting the commercialization of food crops and the use of technologies for better efficiency.
- Capacity building for FBOs. Revitalizing the Agriculture Research. Includes the upgrading of infrastructure and equipment, institutional building, and training for the CARI HR component.

- Agriculture education and training. Includes the Agricultural Education assessment, a scholarship for the Agricultural Sector, and the rehabilitation of both human resources (HR) and infrastructure at the University and at MOA.

Program 4 is composed of the following sub-programs:

- Land reform and capacity building. Deals with the Land Commission and mapping, land titling, upgrading of the secretariat of the LC, and the revised land users legislation that are pre-conditions for the success of LASIP.
- Enhanced land husbandry. Includes agro-forestry and land use mapping, low land fringe land development, and watershed development that includes infrastructure construction. The first year of this sub-program may be 30% as there is equipment investment.
- Expansion of irrigated land. Includes one FS project and two studies—one to carry low land assessment and one for FS for additional funding. In this sub-program, there is a need for additional FS studies. Implementation could be within two years.
- Improved land management. Includes land administration decentralization, improved land use methods, and rehabilitation of land and water management infrastructure for the MOA.

3.2 Funding Sources

The implementation capacity of MOA and its related institutions will need to be enhanced so they are fully-able to successfully implement large-scale programs. The GOL commitment to support the agriculture sector is clear^{12/}; however, for the moment, as the President said, it can only cover the operational level of the GOL.

Liberia belongs to the Heavily Indebted Poor Countries Initiative (HIPC) and it is under the tight “macroeconomic framework” supervision and control of the International Monetary Fund. Due to its tight fiscal discipline, Liberia will be expected to receive approval from the international finance institutions (IFIs) by June 2010 for the HIPC completion point.

From 2003 to 2006, Liberia depended completely on international donors and the UN system for management and financial support. When the GOL was able to begin straightening out its financial situation, it encountered many stumbling blocks in its path, i.e., the international food price crisis in 2008 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.

3.2.2 Donors

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

^{12/} See the President’s Message to the Legislature on the Budget 2010/2011 May 6, 2010

3.3 Gap Analysis

Government revenues have risen by a modest amount in 2009 due to the global financial crisis. In the upcoming years, national budgetary levels will increase by additional budget support from partners and soft loans (when the government will reach the HIPC Completion Point in June 2010), increased institutional and administrative effort in revenue collection, and expanded economic activity as timber, minerals, and even cash crop exports rise.

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

The estimated new investment is estimated at \$US 947 million for the 2011–2015 period with a gap of US\$ 772 million that represents the need for the agriculture sector. Thus the donor's funding will have to be increased to finance the funding gap if LASIP objectives are to be accomplished.

However, in implementing the LASIP, the part of the MOA's budget must be increased to meet additional recurrent costs. International organizations such as AfDB, WB, usually request a country's contribution of 3% while bilateral organizations require 1% to cover the recurrent costs of investment. Thus, with:

- Program 1, MOA needs additional US\$ 6.5 million for 5 years;
- Program 2, MOA needs additional US\$ 2.5 million for 5 years;
- Program 3, MOA needs additional US\$ 3.8 million for 5 years;
- Program 4, MOA needs additional US\$ 3.6 million for 5 years;

This means that for the period 2011-2015, the MOA will need additional US\$ 17 million for 5 years to manage the Liberian Agriculture Sector Investment Program.

It is evident that the implementation capacity of 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 needs would be between \$US 123 million in LASIP Year 1 to a maximum of \$US 195 million, averaging \$US 150 million per year. It will necessitate an effort from donors.

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 LASIP

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 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 (FSNTC)** 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, MOCI, CBL, MOIA, Ministry of Planning and Economic Affairs, Environmental Protection Agency, Liberian Business Association, Liberian Bankers Association, Liberia Federation of Cooperative Societies, and Liberia National Farmers Union.

The **Agricultural Coordination Committee (ACC)**, **MOA**, and a **Donors' Forum** have assigned roles at the sector level. The ACC will provide technical assistance in coordination, implementation, monitoring and evaluating the investment program; the MOA will prepare annual plans drawing from elements of the investment priorities for resource mobilization, allocation, and utilization in the sector; and the Donors' Forum is expected to share progress reports and solicit the views of donors, advocate for resource mobilization within the donor community, and reassure donors of the GOL's continuing commitment to agricultural sector growth and development.

Appropriate oversight also exists at the county, district and clan levels. A **County Development Steering Committee** will coordinate inputs from each of Liberia fifteen 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.

Management of LASIP implementation will rest with the MOA. A LASIP Coordinator will be based at the ministry's Program Management Unit (PMU). There are presently various MOA-based projects aimed at strengthening the work of the agriculture sector; donors include AfDB, World Bank, USAID, and 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:

- 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.

Financial Management

As noted above, the MOA has set up a PMU. In addition to duties outlined above, the PMU will handle procurement, logistics, and financial systems for various projects and donors. The PCU 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, PCU works with the MOA County Agricultural Coordinators, 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 MOA to handle additional resources.

This new financial system will help MOA to handle additional resources and thus, will handle the LASIP.

4.2 Programs

LASIP is composed of four programs: Food and Nutrition Security, Value Chain and Market Linkages, Institutional Development, and Land and Water Management (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 in a way so as to optimize their use and economic optimization as per government’s priority.

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 Ministry of Health [MOH], and the MODG to ensure that Program 1 meets its targets).

For Program 1, Food and Nutrition Security, is composed of various sub-programs that support each other and bring synergy to the over program implementation, there is a need to move toward intensification of low lands. The need for combating schistosomiasis is a precondition to the success of the expansion of land. This program will need to be managed in close coordination with Ministry of Health and Social Welfare and the MOGD.

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

The management of Program 3, Institutional Development, is focused on the MOA and associated parastatals. Here it will be important to assess and push results of these assessments through the legislature process for parastatals reform.

Management of Program 4, Land and Water Development, will help to create an enabling environment for the agriculture sector. The PMU will be the focal point in managing and solving problems for LASIP both with stakeholders and with donors, as it will allow monitoring and evaluation (M&E) and follow-up of project implementation. The ACC could be a good forum for information exchange and coordination.

4.3 Sub-Programs

Each program is composed of several sub-programs. Each sub-program is composed of various projects. These sub-programs are sequenced to be implemented throughout the 2011–2015 period.

The 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. 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 (maximum one year), followed by a project preparation component, and the implementation of an FS on irrigation/low land expansion.

The assessments will also “feed in” inputs for implementing partners on the irrigation sub-program.

Scheduling of Implementation

Table LASIP Scheduling

LASIP 2011-2015 SCHEDULING	Preparatory	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
Preparatory Stage 2010							
Set up management of LASIP							
Studies on roads/prioritization							
Studies on rural Infrastructure							
Studies on Land & Water expansion							
Set up rural finance							
Assessment for Ag. Education							
PROGRAM 1: FOOD AND NUTRITION							
Food Production & productivity enhancement							
IFAD/Ag inputs							
UNJP							
Rice Seeds 1st phase							
Rice Seeds 2nd phase							
WAAP2							
Rice productivity							
Vegetable							
ASRP							
FED							
Health							
National Schisto							
Promotion Tech							
Tree Crop							
STCP							
Cocoa							
Palm Oil							
Agro-Forestry							
WB TC							
Sustainable Fisheries							
WARF							
Sustainable Fisheries							
Livestock Development							

SPINAP Sustainable Livestock								
Women and Youth Development								
Women in Ag								
PROGRAM 2: COMPETITIVE VALUE CHAIN & LINKAGES								
Rehabilitation & Expansion of rural roads								
Rural roads								
LS rural roads								
Need Assessment								
Agri-infra EU program								
Rural agric. Infrastructure & energy								
Rural infrastructure								
WB infrastructure								
Rural electrification								
Lib community empowerment								
Market & Enterprise Development								
Food and marketing								
Input technologies								
Rural Finance								
Rural financial intermediary								
PROGRAM 3: INSTITUTIONAL DEVELOPMENT								
Rebuilding MOA & improved coordination, management								
TAS MOA								
Training former combatant								
Ag census								
Decentralization 7 counties								
M&E								
Planning and Policy								
Technical								
Mechanization								
Livestock – Vet								
Reviewing and upgrading selected parastatals								
Assessment								
CDA								

LPMC							
Building extension and enhancing technology							
CB for Extension							
Techno enhancement							
Capacity building of farm based organizations							
CB for FBOs							
Revitalizing agricultural research							
CB CARI							
Agriculture education & training							
Assessment							
Scholarship							
Rehabilitation of Ag. Infrastructure							
PROGRAM 4: LAND & WATER MANAGEMENT							
Land reform & capacity building							
Land mapping							
Land Titling							
CB for Tech.							
Secretariat							
Legislation land users							
Enhanced land husbandry							
Agro-forestry land use							
Low land and fringe land development							
Watershed development							
Expansion of Irrigated Land							
Assessment of irrigation land							
Swamp rehabilitation							
FS							
Improved land management							
Land Ad. decentralization							
Land use and development for FBOs							
Improve production methods							
Rehabilitation of MOA land and Management							

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

5.1 Levels of Monitoring

The LASIP M&E system is organized on the premise that management decisions based as closely as possible to the activities motivates personnel, makes them react rapidly to changing needs and situations, and encourages economic use of resources. For this reason, it is crucial to ensure that those that records information should be able to use it, to improve the chances that the data will be collected carefully and put to use.

Monitoring of LASIP activities will be conducted from the district level through the county level, and to the national level. As a management tool, monitoring would be organized at each level of management. M&E should be an inclusive process with all interested stakeholders engaged such as GOL, private sector (including farmers), and civil society.

At the district level: The District Agricultural Officer, the lynchpin of agricultural developmental activities at the district level, will keep track of program activities, and carry out corrective action where possible. Similarly, NGOs delivering agricultural support services to farmers at the district level will also be involved in data collection on activities relating to their area of operation. All these categories of staff will be expected to utilize information generated at that level for improved program performance. Where District Agricultural Officers are not well-equipped with information and knowledge to resolve given problems, they will promptly inform higher level officials for technical backstopping.

At the county level: M&E at the county level will aim at tracking program performance, the delivery of physical goods and services, outputs, and outcomes. The County Agricultural Coordinator will lead the data collection, analysis, and reporting efforts at this level. NGOs participating in agricultural development efforts at the county level will generate information relevant to their respective areas of operation, analyze them, and submit reports to the County Agricultural Coordinator (CAC) for further collation, analysis, and submission to the National Agricultural Office in Monrovia. NGOs involved in agricultural development efforts at the county level will be expected to submit reports to the CACs on a quarterly basis.

At the national level: Divisions under the respective agricultural departments will submit reports to corresponding departments with copies to the Department of Planning and Development. Various departments will in turn prepare analyzed reports to the Food Security and Nutrition Committee headed by the Minister of Agriculture. The Food and Nutrition Committee will review these reports and provide feedback to the departments for program improvement. To ensure an effective cybernetic feedback loop, the extension department will be expected to provide feedback on reports to the county agricultural offices for enhanced program performance at the county level.

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

5.2.1 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 either 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 would 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) M&E Orientation and Capacity Building for Stakeholders 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 TORs, Contracts/Agreements, Surveys (including data collection instruments, 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, 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 on-going 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 feed-back to the M&E Director, reporting on observations made during field visits. For this purpose, staff will use the 'Field trip Report format' in Section 7 of this manual. The format will be completed and submitted to the M&E Director on return from field visits for prompt remedial action when necessary

- 8) Facilitate Beneficiary Feedback: Develop the capacity of program beneficiaries in participatory monitoring and Evaluation (PM&E) techniques, to involve beneficiaries in program monitoring.
- 9) Formulate an M&E Work Plan: Develop an annual 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.

5.2.2. 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

5.2.3. 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 Report Formats attached in Annex 1
- 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 monitoring reports. These reports will complement results obtained using more formal methodologies.
- 8) Organise program review meetings at the county level and participate in program review meetings at the national level

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

- 1) Field data collection using prescribed formats
- 2) Submission of monthly, quarterly and annual progress reports to the County Agric Officer
- 3) Utilisation of findings arising from progress and field visit reports to assist farmers to improve performance

- 4) Training of farmers in participatory monitoring techniques.
- 5) Output of information generated through participatory monitoring records of farmers and other beneficiaries would be used 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

5.2.5. 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 Agric Officers as the case may be
- 2) Engage in joint work planning sessions with County/District Agric Officers
- 3) Be involved in monitoring of program activities
- 4) Participate in program review meetings

5.3 Communicating M&E Findings and Providing Feedback

Monitoring findings would be used to make managerial decisions at each level of implementation of the LASIP Program. In addition to direct use by the level collecting the data, feedback would be given to personnel at each level regarding the results of the data collected and the analysis made at higher levels.

Where findings are not used at the level of collection, data reporting can become irregular and of poor quality. Every effort would therefore be made to equip data collectors with the capacity to utilize data at their level of operation.

Monitoring results, including field trip reports, would be summarized and discussed during program review meetings and also incorporated in the Quarterly Reports. Suggested revisions would be incorporated in the Plan of Action for the succeeding period. In addition, the review would identify new evaluations and studies to be conducted and revise/ update the evaluation plan.

5.4 Presentation of Performance Data

Performance data of the LASIP Program would be presented in comparison to earlier data and to the baseline. Data would be presented in a simple, clear and easily understandable format. Only the most important data should be presented. Acronyms and jargons should be avoided. A minimum of background information should be provided to establish the context. Major points should be stated upfront. Findings and recommendations should be organized around key outcomes and their indicators. A separate appendix or report can be used to convey detailed data. In table 1, we present points of analysis and questions that should be answered in the presentation of performance data.

5.5 Indicators for LASIP

Both quantitative and qualitative indicators have been selected under the LASIP program 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, km of feeder roads constructed, fertiliser application rate per hectare, Humber of farmer trained, % farmers adopting improved technologies, % increase in the value of agricultural exports etc. 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.

In selecting indicators for the LASIP, consideration was given to ensure that the indicators meet the following attributes:

5.5.1 Practicality

Three main issues were considered under this attribute.

- The selected indicators should measure what is important in the hierarchy of results rather than what is easy to measure
- Indicators must measure change that is attributable to the program
- Indicators and the corresponding data collection methods they imply must be cost-effective.

In choosing the indicators an iterative process was adopted. Indicators that measure what is important and attributable to the narrative statement were selected and examined in terms of the data collection requirements they implied. When the indicators involved appeared to be complex and costly in terms of data collection and analysis, less costly alternatives were considered. This is because if an impractical indicator is collected, chances are that monitoring and evaluation data will never be collected; or if it is collected, nobody will know how to analyze it.

5.5.2 Targeted

Indicators and targets bring the program to life and add meaning to the concept of necessary and sufficient conditions. Targets are expected to reflect the amount of accomplishments required at one level that we hypothesize will enable us achieve the next higher level.

5.5.3 Independence

Care was taken to ensure that indicators are independent from results at another level, that is, the use of indicators for one level to measure performance at another level was avoided.

Details of Indicators and targets selected for the LASIP Program are presented in the table below.

INDICATOR	Baseline	Target				
		PY1	PY2	PY3	PY4	PY5
LAND AND WATER DEVELOPMENT SUB-PROGRAM						
Area of land under food crop production, in ha						
<i>Rice paddy, ha</i>	160000	192000	224000	256000	288000	320000
<i>Cassava, ha</i>	85000	102000	119000	136000	153000	170000
<i>Potatoes, ha</i>	2000	2400	2800	3200	3600	4000
<i>Maize, green, ha</i>	6500	7800	9100	10400	11700	13000
<i>Groundnuts, with shell, ha</i>	8700	10440	12180	13920	15660	17400
<i>Soybean, ha</i>	7800	9360	10920	12480	14040	15600
% of households with access to land	66%	70%	75%	80%	85%	90%
% households with access to information on land resource.	N/A	10%	30%	40%	50%	60%
Area of tree crops, ha						
<i>Rubber, ha</i>	126000	151200	176400	201600	226800	252000
<i>Cocoa, ha</i>	17000	20400	23800	27200	30600	34000
<i>Coffee, ha</i>	18000	21600	25200	28800	32400	36000
<i>Oil palm, ha</i>	17000	30000	50000	80000	125000	185000
Availability of land use map	No	Yes	Yes	Yes	Yes	Yes
Ha of irrigable land put under irrigation and small scale schemes	2000	3000	10000	15000	20000	25000
Availability of wetland management policy	No	Yes	Yes	Yes	Yes	Yes
Ha of lowlands (swamps) developed		4000	8000	15000	25000	40000
No. of farmers cultivating on developed lowlands (swamps)		4000	8000	15000	25000	40000
Ha of wet and degraded land developed by public sector		400	800	1500	2500	4000
Total land under cultivation (arable and permanent crops), ha	600000	720000	840000	960000	1080000	1200000
FOOD SECURITY AND NUTRITION SUB-PROGRAM						
Volume of food Production in mt:						
<i>Rice, mt</i>	231800	288000	358400	435200	518400	576000
<i>Cassava, mt</i>	550000	714000	952000	1224000	1530000	1870000
<i>Potatoes, mt</i>	20000	24000	28000	32000	36000	40000
<i>Maize, mt</i>	19500	23400	27300	31200	35100	39000
<i>Groundnuts, mt</i>	5300	6360	7420	8480	9540	10600
<i>Soybean, mt</i>	3250	3900	4550	5200	5850	6500
Yield of tree crops: kg/ha						
<i>Rubber, kg/ha</i>	837kg/ha	900	950	1000	1020	1050
<i>Oil palm, mt/ha</i>	10.7mt/ha	11	12	13	14	15
<i>Cocoa, kg/ha</i>	176.4kg/ha	200	250	350	400	450
<i>Coffee, kg/ha</i>	176.6kg/ha	180	200	250	300	300
Volume of tree crop production in mt:						

INDICATOR	Baseline	Target				
		PY1	PY2	PY3	PY4	PY5
<i>Rubber, mt</i>	105500	113400	119700	126000	128520	132300
<i>cocoa, mt</i>	3000	3400	4250	5950	6800	7650
<i>coffee, mt</i>	3180	3240	3600	4500	5400	5400
<i>oil palm, FFB Mt</i>	183000	187000	204000	221000	238000	255000
No. of fertilizer distribution centers						
Fertilizer consumption, mt	300 mt	600	1200	2400	5000	6000
% 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%
No. of farmers engaged in tree crop and forestry sub-sector						
No. of hectares under permanent crops						
Volume of marine fish catch, mt	16245	18000	20000	22000	25000	30000
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
No. of animals vaccinated against various diseases						
No of fodder banks established						
<i>Animal population increased</i>						
No. of heads of cattle	38000	45600	55000	66000	79200	95000
No. of heads of sheep	230340	276000	300000	360000	400000	480000
No. of heads of goats	261600	300000	360000	414000	450000	550000
No. of heads of pigs	131000	144000	165000	198000	235000	282000
No. of heads of poultry	5920000	6512000	7100000	7800000	8500000	1000000
Carcass weight of animals improved, kg						
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					
No. of animal production centers established						
% participation of women participating in storage, processing and marketing		50%	60%	70%	80%	80%
% participation of women in cash crop production and processing, fisheries and forestry related downstream activities such as furniture making.		40%	50%	60%	70%	75%
% of women with access to land		30%	40%	50%	60%	70%
% of women with access to extension services		30%	40%	50%	60%	70%

INDICATOR	Baseline	Target				
		PY1	PY2	PY3	PY4	PY5
% of women with access to farmer field schools		30%	40%	50%	60%	70%
% of youth engaged in agriculture		40%	50%	60%	70%	75%
No. of youth engaged in outgrower or smallholder schemes						
3.COMPETITIVE VALUE CHAINS AND MARKET LINKAGES-PROGRAM						
No. of assessment reports of rural roads produced	No	Yes	Yes	Yes	Yes	Yes
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		300	500	800	1200	1600
No. of markets constructed/rehabilitated/district		100	110	115	125	150
No. of slaughter houses		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		4	6	10	12	15
No. of cohesive farmer groups formed		64	70	80	90	100
No. of farmers in groups		1280	1400	1600	1800	2000
Volume of credit made available to agric producers and FBOs						
% repayment of due loans		90%	90%	100%	100%	100%
Availability of report on opportunities for IMTs	No	Yes	Yes	Yes	Yes	Yes
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		30%	40%	50%	60%	70%
% farmers with access to intermediate technologies and devices		10%	15%	20%	25%	30%
% of farmers with access to:						
Credit, storage and processing facilities		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		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%
4. INSTITUTIONAL DEVELOPMENT SUB-PROGRAM						
No of staff trained	N/A	50	60	70	80	90
No. of high yielding disease resistant varieties developed for:						
<i>Cereals</i>	N/A	3	5	7	9	12
<i>Legumes</i>	N/A	2	3	4	5	7
<i>Root and tuber crops</i>	N/A	2	7	9	9	10
No. of post-harvest management and processing technologies developed		N/A				
No. of improved crop protection technologies developed	N/A	2	7	9	11	13
Technology dissemination policy available	N/A	Yes	Yes	Yes	Yes	Yes

INDICATOR	Baseline	Target				
		PY1	PY2	PY3	PY4	PY5
% farmers reached by extension agents	N/A	50%	60%	70%	75%	80%
No. of radio broadcasts	N/A	180	240	360	360	360
No. of extension leaflets developed	N/A	20000	30000	40000	50000	60000
No. of graduates produced from agricultural institutions	N/A	10	15	20	25	30
No. of FBOs developed	100	50	75	100	125	125
No. of farmers involved in the FBOs	25	2500	3750	5000	6250	7500

5.6 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, we understand the source of data. 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 Report
- LISGIS & Land & Water Resource/MOA Reports
- Extension Department Reports
- Reports of Agencies involved in fertilizer distribution (e.g., FAO), Private Fertilizer Distributors, Private plantations
- Quarterly Reports of Crops Resources Division of MOA
- LISGIS/WFP Records
- Socio-economic survey Reports of LISGIS
- Agricultural Survey Reports
- Quarterly reports of National Bureau of Fisheries
- Quarterly Reports of Livestock Division
- Quarterly Reports of County Agricultural Coordinators
- Quarterly Reports of Ministry of Public Works (Department of Feeder Roads)
- Central Bank of Liberia
- Quarterly Reports of Cooperative Development Agency CDAs)
- MOA Technical Dept Records
- NGO Reports
- Training reports
- Varietals release committee reports
- Research reports of CARI
- Agricultural Policy documentation
- Farmer survey report
- Records of agricultural training institutions
- Food balance sheet of MOA Statistics Division
- Ministry of Commerce and Industry Records
- Nutrition
- Survey Reports
- Ministry of Health and Social Welfare records Records

5.7 Data Collection Methodologies

The data gathered for monitoring and evaluation have three purposes: description, explanation and prediction. These primary uses of information – description, explanation and prediction – affect the overall design, scope and modes of data collection and the analysis. More specifically, the data generated in monitoring and evaluation will be used:

- To monitor physical and financial progress. The data required for physical and financial monitoring are usually available in project records and documents. This will involve collection at the county level and collation at the national level.
- To examine the responses of the project beneficiaries to the services and inputs being provided by the project. To do this requires structured surveys designed to answer questions on beneficiaries' knowledge of, reaction to, and future use of project inputs and services. Here the data collection methodology is the principal issue;
- To study specific implementation problems facing the project so as to diagnose the cause and suggest practical solutions. A blend of data collection methods such as questionnaires and interviews may be appropriate but qualitative information will certainly be required.
- To assess (or predict) the effects of project interventions on job creation, incomes and economic growth. Studies may have to be conducted to determine the change in livelihood conditions of beneficiaries.
- To assess the socio-economic impact of the program, particularly by collecting and interpreting data on income, living standards, peoples' participation and the environment. Such data raise the complex issues of all data requirements, which is why selectivity in conducting such studies was taken into consideration in LASIP M&E system design.

References

- African Development Bank, African Water Facility. 2008. Liberia Support to Water Sector Reform Appraisal Report.
- African Development Bank. 2009. Liberia: Agriculture Sector Rehabilitation Appraisal Report – Volume I Main Report.
- Catholic Relief Services. 2009. Liberia Integrated Assistance Program: Quarterly Report, October – December 2008. Monrovia, Liberia.
- Central Bank of Liberia. 2009. Annual Report 2008.
- FAO Liberia. 2009. Support to Vulnerable Groups in Rice Production & Productivity: FAO Implementation Proposal. Monrovia, Liberia
- FAO Technical Cooperation Department. 2009. Field Programme Activities: List of Operationally Active Projects for all Organizational Units in Liberia by Funding Source.
- FAO. 2008. High Level Task Force on Global Food Crisis FAO/IFAD/WFP/WB/UNDP Needs Assessment and Response Proposal for EC Priority Country: Republic of Liberia. FAO ref: GCP/INT/079/EC. European Commission Agreement: DCI-FOOD-2008-165-29.
- FAO. 2007. Food Security through Commercialization of Agriculture (FSCA) Project Document: Liberia.
- FAO Investment Centre Division. 2006. New Partnership for Africa's Development (NEPAD) – Comprehensive Africa Agriculture Development Programme (CAADP) Government of Liberia National Medium Term Investment Programme.
- FAO. 2005. Irrigation in Africa in figures. AQUASTAT Survey. FAO, Rome, Italy.
- FAO. 2005. Liberia Livestock Sector Brief. FAO/AGA, Monrovia, Liberia.
- FAO/ILO/Ministry of Agriculture (MOA). 2007. Comparative Study of the Job-Creating Capacity and Efficiency of Crops and Related Activities in Liberia. Report Submitted by ITTAS Consultancy Ltd., Accra, Ghana.
- Integrated Framework (IF) for Trade Related Technical Assistance to Least Developed Countries. 2008. Liberia – Tapping Nature's Bounty for the Benefit of All: A Diagnostic Trade Integration Study.
- Liberia Institute of Statistics and Geo-Information Services (LISGIS). 2009. Republic of Liberia 2008 National Population and Housing Census. Monrovia, Liberia.
- Marine Resources Assessment Group (MRAG) Ltd. 2005. Review of Impacts of Illegal, Unreported and Unregulated (IUU) Fishing in Developing Countries. Synthesis Report, London, UK.
- Ministry of Agriculture. 2009. Liberia National Rice Development Monrovia, Liberia.
- Ministry of Agriculture. 2009. Liberia National Cocoa Development Monrovia, Liberia.
- Ministry of Agriculture. 2009. Food and Agriculture Policy and Strategy: From Subsistence to Sufficiency. Monrovia, Liberia.
- Ministry of Agriculture, Bureau of National Fisheries. 2008. West Africa Regional Fisheries Project Liberia: National Project Concept Note.
- Ministry of Agriculture. 2009. Assessment and Institutional Reform at MOA. Monrovia, Liberia.
- Ministry of Agriculture. 2008. National Food Security and Nutrition Strategy: A Cross-Sectoral Strategy for the Government of Liberia.

Ministry of Agriculture. 2008. Revitalizing the Rubber Sector (Draft Memo.).

Ministry of Agriculture. 2008. Potential Effects of the Global Financial Crisis on Agriculture and Forestry in Liberia. (Draft Memo)

Ministry of Agriculture. 2008. Assessment of the MOA

Ministry of Agriculture. 2007. Strategic Plan of Action for Revitalizing CARI.

Ministry of Agriculture. 2007. Comprehensive Assessment of the Agriculture Sector, Volume 1 – Synthesis Report.

Ministry of Agriculture. 2007. Comprehensive Assessment of the Agriculture Sector (CAAS-Lib): Tree Crop Sub Sector Report.

Ministry of Agriculture. 2006. Statement of Policy Intent for Agriculture. Monrovia, Liberia.

Ministry of Agriculture, 1981. Liberia Agricultural Development: Policy and Organizational Structure. Monrovia, Liberia

Ministry of Finance. 2009. Overall Aid Table: FY 08/09 and 09/10 Projects, Disbursement Basis, May 2009. Monrovia, Liberia.

Ministry of Health, “2007 National Health Policy and Plan” 2008

Ministry of Lands, Mines and Energy. 2007. National Integrated Water Resources Management Policy. Monrovia, Liberia.

Ministry of Planning and Economic Affairs. 2009. Lift Liberia Scorecard, April 2008 – April 2009. A PowerPoint Presentation.

New Partnership for African Development (NEPAD). 2006. Comprehensive Africa Agriculture Development Programme, Liberia National Medium-Term Investment Program (NMTIP). Monrovia, Liberia.

Obidegwu, Chukwuma. 2004. Post-conflict Peace-Building in Africa: The Challenges of Socio-Economic Recovery and Development. World Bank Africa Region Working Paper Series No. 73, Washington, D.C.

Republic of Liberia. 2008. Government and UN Joint Program on Food Security & Nutrition.

Republic of Liberia. 2008. Liberia Poverty Reduction Strategy.

Republic of Liberia. 2006. Liberia Interim Poverty Reduction Strategy.

Sirleaf, Ellen Johnson. 2009. Annual Message to the Fourth Session of the 52nd National Legislature of the Republic of Liberia. Monrovia, Liberia

Tefft, James. 2005. Agricultural Policy and Food Security in Liberia. ESA Working Paper No. 05-11.

United Nations Children Fund. 2009. EC’s Contribution to Strengthening the Government and UN Joint Response to the Food Crisis in Liberia through UNICEF.

United Nations Development Program. “2009 UNDP Human Development Report,” UNDP, 2010.

United Nations Development Program. 2009. EC’s Contribution to Strengthening the Government and UN Joint Response to the Food Crisis in Liberia through UNDP.

United Nations Development Program Liberia. 2009. UN Trust Fund for Human Security Support to the People of Liberia – Phase I: October 2006 to September 2007.

United Nations Development Program Liberia. 2009. UN Trust Fund for Human Security Support to the People of Liberia – Phase II: October 2007 to December 2008.

United Nations Development Program Republic of Liberia. 2008. Liberia Poverty Reduction Strategy.

United Nations Development Program. 2006. State of the Environment Report for Liberia. UNDP, Monrovia, Liberia.

Welthungerhilfe (formerly German Agro Action-GAA). 2009. Project Summary of the Reintegration and Recovery Program (RRP).

World Bank. 2008. Emergency Project Paper on a Proposed Emergency Food Crisis Response Program to the republic of Liberia from the Food Price Crisis Response Trust Fund for an Additional Financing Grant to the Agriculture and Infrastructure Development Project (US\$3.0 Million); and an Additional Financing grant to the Community Empowerment Project II (US\$3.0 Million); and a Grant for a Food Support Project for Vulnerable Women and Children (US\$4.0 Million). Report No. 43788-LR

World Bank. 2007 "Towards Women's Economic Empowerment: A Gender Needs Assessment," World Bank, August 2007, pp. 22.

World Bank. 2007. Emergency Project Paper on a Proposed Pre-Arrears Clearance Grant in the amount of SDR24.30 Million (US\$37.0 Million Equivalent) to the Republic of Liberia for an Agriculture and Infrastructure Development Project. Report No. 39163-LR.

World Bank. 2008. Project Concept Note: Mano River Union Regional Food Security Project.

World Food Program. 2009. Preliminary Findings: Liberia Food Security and Nutrition Survey (LFSNS) – August/December 2008 (Draft). Monrovia, Liberia.

World Food Program. 2009. EC's Contribution to Strengthening the Government and UN Joint Response to the Food Crisis in Liberia through WFP.

World Food Program. 2009. Declaration of Principles Between United Nations World Food Program (WFP) and the Government of Liberia Ministry of Agriculture (MOA) and the food and Agriculture Organization of the United Nations (FAO) Regarding the Implementation of a Purchase for Progress.

LIST OF TABLES

Table 1	Liberia Selected Economic and Financial Indicators: 2004–2008
Table 2	Liberia: Sectoral Composition of GDP
Table 3	Employment by Industry, 2006–2008
Table 4	Commodity Composition of Exports, 2006–Nov. 2008
Table 5	Commodity Composition of Imports, 2006 – Nov. 2008
Table 6	Import of Meat Products, 2005/2006
Table 7	Agricultural Land Capability
Table 8	Selected Bilateral and Multilateral Donor-Funded Projects
Table 9	Budgetary Allocations, 2006/07–2008/09
Table 10	Estimates of International Partner Contributions to the Food and Agriculture Pillar, 2008–2011
Table 11	CAADP Financing Gap

LIST OF BOXES

Box 1	Profiles of Investment by Agricultural Concessions
-------	--

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

	2004	2005	2006	2007	2008
	Est	Est	Est	Est	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
	(Percent of GDP)				
CENTRAL GOVERNMENT					
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, -1)	-19.4	-42.3	-30.3	-37.2	-40.0
Current account balance, excluding grants (deficit, -1)	-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 U.S. dollars, 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
Sources, IMF Article IV Consultation with Liberia, 2009					
* Liberian dollar currency in circulation and commercial bank reserves (denominated in Liberian dollars) held at the central bank					
** Liberian currency outside banks, plus demand, time, and savings deposits in Liberian and US dollars					

Annex Table 2: Liberia: Sectoral Origin of Gross Domestic Production (GDP) *

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 & Timber	0.0	0.0	18.9
Charcoal	74.1	81.1	78.6
Mining & 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 & Water	3.0	3.3	3.8
Construction	11.3	12.3	16.1
Trade, Hotels, etc.	29.2	31.9	36.7
Transportation & 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 & 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: CBL Annual Report 2008

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

Commodity	2006	2007	2008
Rubber	150.1	183.9	205.6
Cocoa Beans & 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 (MCI), Land Mines and Energy (MLME) and Firestone Liberia

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

Commodity	2006	2007	Nov. 2008
Food & Live Animals	117.0	130.9	205.3
O/w: Rice	62.4	60.0	125.8
Beverages & Tobacco	13.7	15.7	10.1
Crude Materials	11.9	6.9	13.5
Minerals, Fuel & Lubricants	10.6	5.7	12.7
Animals & Vegetable Oil	7.5	7.2	2.7
Chemical & Related Products	23.6	20.4	36.4
Manufactured Products	48.7	70.7	99.3
Machinery & 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 2005/06

	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

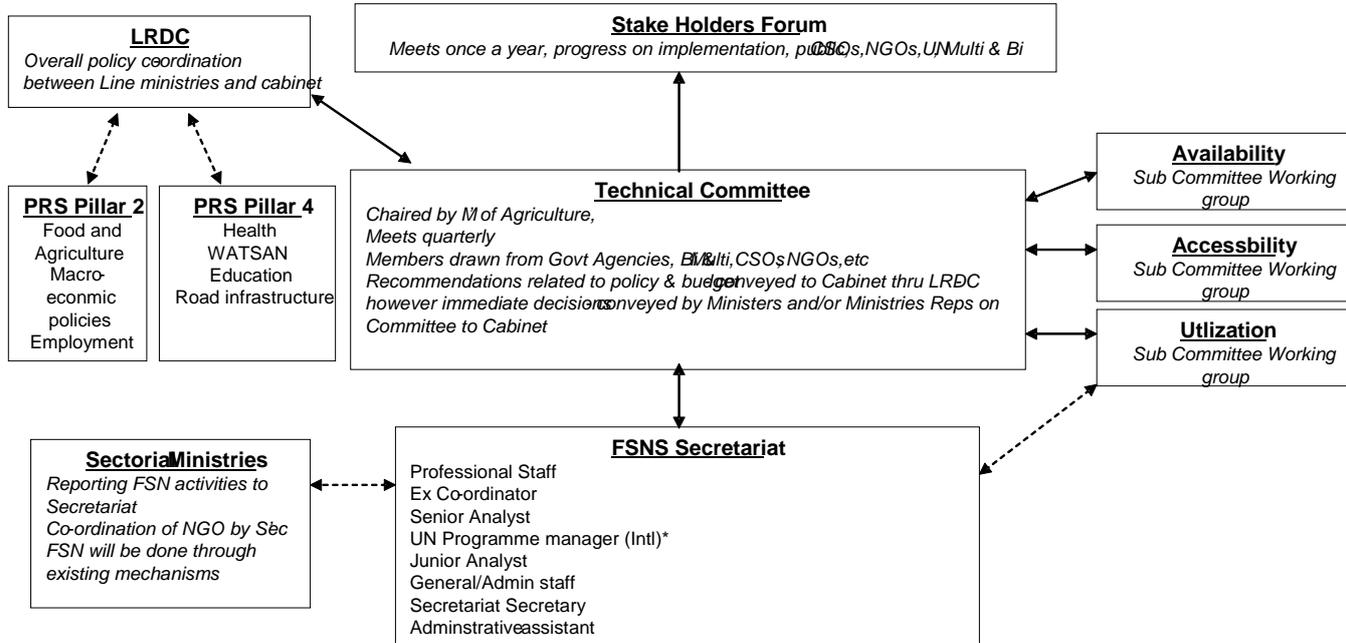
Source: Ministry of Commerce and Industry

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 beach plains	Poor to well drained	Unsuitable for most crops except cassava, coconut, oil palm	Low fertility, low organic matters (OM)	Fertility management
Floods 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 OM	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

Figure 5: Institutional Framework to support the FSN National Strategy Implementation



**Annex Table 9: Budgetary allocations, 2006/07 to 2008/09,
\$M and percent of budget**

Min/Agency	06/07		07/08		08/09	
	Amt	%	Amt	%	Amt	%
Agriculture	3.1m;	2.0	3.8	1.8	7.0	2.3
Health	7.6	5.0	12.4	6.0	15.1	5.0
Education	11.1	8.0	21.5	10	23.4	7.0
Public Works	5.6	4.0	10.2	5.0	17.1	5.9
Lands & Mines	2.2	1.6	3.3	1.6	3.5	1.1
Finance	4.9	3.5	7.8	3.8	9.1	3.0
Justice	8.1	6.0	12.4	6.0	15.3	5.0
Defense	1.9	1.3	3.7	1.8	6.2	2.0
National Budget	135.0		199.4		298.1	

Source: Ministry of Agriculture Budget Office

**Annex Table 10: International Partner Contribution to the Food
and Agriculture Pillar (\$M) 2008/2011**

World Food Programme	\$97.7
United Kingdom	2.8
United States	53.7–76.0
World Bank	8.0
DANIDA	8.4
SIDA	0.9
EC	15.1
Total	210*

Source: Ministry of Finance
* These are mere estimates; data is still being collected

*** Indicative cost estimates largely obtained from CAAS-Lib (C) and adjusted with additional information from the NMTIP of 2006 and discussions with government officials including those at the Ministry of Agriculture.**

BOX 1: Summary of Recent Investment by Agricultural Concession

Until 2008, significant private investment in agriculture was in tree crops. This changed with the increase in international food prices. Although cash crops investment is dominant, investors are now looking favorably into the food subsector 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 percent 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 Cocopa 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 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:

ADA/LIAP (spell out?) – 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 commenced.

EQUITORIAL BIOFUELS/LIBINC – Equitorial Biofuels 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 (spell out?)** 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 (spell out?)**, which, up until a couple of months ago, was controlling both entities; **these have been sold to**.....

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. Significant new investment flows