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# SOCIAL ACCOUNTING MATRICES FOR THE GAMBIA, LIBERIA, MAURITANIA AND SIERRA LEONE

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## Abstract

The report documents the construction of Social Accounting Matrices (SAMs) for The Gambia, Liberia, Mauritania and Sierra Leone. The construction of the SAMs follows the top-down approach. First, aggregated SAMs representing the macro features of the economies are constructed: the macro SAMs. Then, industries, commodities, and institutional accounts are disaggregated with the macro SAMs entries serving as control totals: the micro SAMs. Data sources include national accounts, government financial statistics, balance of payments, and international trade statistics. The result is consistent and balanced 2009 SAMs for The Gambia, Liberia and Mauritania, and a 2008 SAM for Sierra Leone.

**Key Words:** The Gambia, Liberia, Sierra Leone, Mauritania, Social Accounting Matrix, Economywide Model.

## Résumé

Ce rapport documente la construction des matrices de comptabilité sociale de la Gambie, du Liberia, de la Mauritanie et de la Sierra Leone. Les matrices sont construites selon une approche top-down. Les matrices agrégées (Macro SAMs) représentant les caractéristiques globales des économies sont d'abord élaborées. Ensuite, les comptes de branches, de produits et des différentes institutions sont désagrégées dans le cadre de « Micro SAMs » à partir des matrices agrégées, ces dernières représentant les contraintes macroéconomiques. Les sources de données sont constituées des comptes nationaux, les statistiques financières de l'Etat, de la balance des paiements et des statistiques du commerce international. Les résultat du travail donnent une matrice de compatibilité sociale cohérente et équilibrée de 2009 respectivement pour la Gambie, le Liberia et la Mauritanie, et de 2008 pour la Sierra Leone.

Mots clés: Gambie, Liberia, Sierra Leone, Mauritanie, Matrice de comptabilité sociale, Modèle économique

#### 1. Introduction

The increasing needs for science-based evidence in policy planning and implementation is creating more and more demand for the development and timely availability of statistical framework and analytical tools in developing countries. This report documents the building of Social Accounting Matrices (SAMs) for The Gambia, Liberia, Mauritania, and Sierra Leone. SAMs for these four countries have been developed with the aim of contributing to a better understanding of the transaction flows taking place in these economies.

A SAM is an input-output table laying out the structure of an economy. It is a consistent quantitative macroeconomic data framework representing the transaction flows between sectors and institutional units within an economy during a given period of time, generally one year. 1 The standard structure of a SAM features the following three components: the supply, the use, and the revenue allocation.

The supply component describes the production structure in terms of input use (the input-output table) and value added (imputed to the compensation for employees, the gross operating surplus and mixed income, and the taxes and subsidies on production) of industries, as well as imports from abroad. Commodity supplies are valued at purchasing prices through the addition of trade and transport margins, and taxes less subsidies on products.

The use component lays out the destination of products towards intermediate consumptions, exports, private final consumption, government consumption, fixed capital formation, and changes in inventories.

The revenue allocation component records the distribution of value added among the institutional categories,<sup>2</sup> and adds information on inter-institutional transfer receipts and payments and the saving and investment account.

This is the first attempt to construct SAMs for these countries, with the exception of The Gambia; a SAM for that country was constructed in year 1990 by Jabara, Lundberg and Jallow (1992) as part of the Cornel University Food and Nutrition Policy Program (CFNPP).<sup>3</sup> However, the changing character of the economies over time and the instability of the world economy raise the need for more recent information on the Gambian economy. This work is intended to fill the data gap by providing more recent benchmark data for economy-wide modeling and the analysis of policies and external shocks in the four countries.

<sup>&</sup>lt;sup>1</sup> Cockburn et al., 2010.

 <sup>&</sup>lt;sup>2</sup> Institutional sectors include: non-financial corporations, financial corporations, households, general government and non-profit institutions serving households, and the rest of the world.
 <sup>3</sup> The 1990 SAM for The Gambia was largely constructed from data collected from the household income and expenditure

<sup>&</sup>lt;sup>3</sup> The 1990 SAM for The Gambia was largely constructed from data collected from the household income and expenditure survey conducted in The Gambia from September 1989 to March 1990. This survey which primarily feeds the accounts of the SAM was completed by the revised national accounts, the financial reports of parastatal structures, the agricultural survey and population census, and national statistics on trade and labor. The 1990 SAM was therefore developed using a "bottom-up" approach.

We follow a top-down approach in constructing the SAMs for The Gambia, Liberia, Mauritania, and Sierra Leone. This approach is generally followed when the national account tables, i.e. the supply and use tables and the integrated economic accounts, are not available. The procedure can be summarized into two major steps. First, the macroeconomic structure and transactions of each country is presented through a macro SAM. Then, the framework is further disaggregated to allow more detailed representation of the economy.

#### 2. The Macro SAMs

The macro SAM aggregates the flows of economic transactions which took place within a specific economy into three major accounts: industry/commodity, factors, and institutions. The macro SAMs built for The Gambia, Liberia, Mauritania, and Sierra Leone also feature detailed representation of the institutional accounts, i.e. the private institutions (households and corporations) account, government account, the rest of the world account, and the capital account splits up into the gross fixed capital formation and the changes in inventories. The macro SAMs are compiled from national accounts data made available by the national statistical offices or from a number of regional and international institutions. The next sections discuss the steps followed in constructing the macro SAMs successively for the four countries.

The macroeconomic SAM for The Gambia uses aggregated data contained in the 2011 African Statistical Yearbook<sup>4</sup> and the 1990 SAM for The Gambia. Except for the intermediate demand, most of the data are obtained from a systematic bookkeeping of observed national account data from the 2011 African Statistical Yearbook (ASY). Total intermediate consumption at current prices is estimated by applying the input cost ratio of the economy in 1990, which is the total input cost by unit of GDP at current prices. The ratio is estimated at 50 per cent using the 1990 SAM. Knowing the GDP at 2009 prices from the 2011 African Statistical Yearbook, the ratio is used to impute the total intermediate consumption of the economy. Receipts from direct taxes are obtained by deducting revenues from the indirect taxes from the total fiscal revenue. Other accounts, such as institutional transfers, balance the macro SAM supply and use accounts.

<sup>&</sup>lt;sup>4</sup> The Africa Statistical Yearbook is a joint publication of the African Development Bank, the African Union Commission, and the United Nations Economic Commission for Africa.

	Factors	Private Institutions	Government		Fixed Capital Formation	Changes in Inventories	Industries /Commodities	Total
Factors							22279	22279
Private Institutions	21908		996	1521				24425
Government	371	990		1021			2527	4909
Rest of the World							6579	6579
Fixed Capital Formation		3627	2803					6430
Changes in Inventories		676						676
Industries /Commodities		20813	1885	1581	6430	676	13045	44430
otal	22279	26106	5684	4123	6430	676	44430	109728

Table 1: Macro SAM for The Gambia, 2009 (in millions dalasi)

Source: Authors' calculations from the 2011 African Statistical Yearbook, and the 1990 SAM (Jabara et al. 1992).

The SAM for Liberia uses data from the 2011 African Statistical Yearbook. In contrast to The Gambia, this is the first attempt to construct a SAM for Liberia and there is no input-output table available for the country yet. This exercise therefore required us to complement our source materials with economic reasoning. Comparing its economic structure with other Sub-Saharan African countries (Appendix 1), it appears that the economies of Liberia and the Central Africa Republic are close in various aspects. Therefore, imputing an input cost ratio of 55% to Liberia may not be far from the real figure. We then estimate the total intermediate consumption using the ratio and the GDP at 2009 prices.

Table 2: Macro SAM for Liberia, 2009 (in millions Liberian dollars)

	Factors	Private Institutions	Government		Fixed Capital Formation	Changes in Inventories	Industries /Commodities	Total
Factors							58525	58525
Private Institutions	57070		2574	56435				116079
Government	1455	956		1612			12974	16997
Rest of the World		10653					87001	97654
Fixed Capital Formation		-3362	5614	22467				24719
Changes in Inventories					13042			13042
Industries/Co mmodities		107830	8809	17141	11678	13042	39044	197544
Total	58525	116077	16997	97655	24720	13042	197544	524560

Source: Authors' calculations from the 2011 African Statistical Yearbook.

Unlike the macro SAMs of Gambia and Liberia, Sierra Leone's macro SAM is built up from National Account tables. The Income Account Tables from Statistics Sierra Leone (2009) provide information for the elaboration of the macro SAM.

On the input use side, the Sierra Leone case is similar to the previous country. In the absence of information on the input intensity for this country, we rely on the Guinea Bissau figure based on assumption that both countries are close structurally. Then, we apply the input cost ratio of 30% to the Sierra Leone's GDP at 2008 prices in computing the total intermediate consumption.

	Factors	Private Institutions	Government	Rest of the World	Fixed Capital Formation	Changes in Inventories	Industries /Commodities	Total
Factors							6069780	6069780
Private Institutions	5084041			70325				5154366
Government	761447	295801		331074			357365	1745687
Rest of the World	224292						2462501	2686793
Fixed Capital								
Formation		762259	370712	1441723				2574694
Changes in Inventories					2178399			2178399
Industries/Commodities		4096306	1374975	843671	396295	2178399	1916645	10806291
Total	6069780	5154366	1745687	2686793	2574694	2178399	10806291	31216010

Table 3: Macro SAM for Sierra Leone, 2008 (in millions Leone)

Source: Authors' calculations from the Income Account Tables, Statistics Sierra Leone (2009).

Unlike the previous countries, Mauritania has neither a social accounting matrix nor an input-output table, to the best of our knowledge. Instead, the macro SAM has been sourced exclusively from data compiled from the 2011 African Statistical Yearbook. Regarding the IO table, we apply the structure of the 2006 Mali SAM to Mauritania based on the assumption that both economies are structurally close.

 Table 4: Macro SAM for Mauritania, 2009 (in millions ouguiya)

	Factors	Private institutions	Government	Rest of the world	Fixed Capital Formation	Changes in Inventories	Industries	Total
Factors							726545	726545
Private Institutions	650745		42703	29773				723221
Government	75800	39775		6100			66925	188600
Rest of the World		17837	56				531700	549593
Fixed Capital Formation		76122	18344	125029				219495
Changes in Inventories								0
Industries		589487	127497	388691	219495	0	844397	2169567
Total	726545	723221	188600	549593	219495	0	2169567	

Source: Authors' calculations from the 2011 African Statistical Yearbook.

#### 3. Disaggregating the Macro SAM

The steps forward consist of disaggregating the macro SAMs to allow detailed representation of factor, commodity, and industry accounts. In that sense, the macro SAMs' entries serve as control totals for the various tables of the disaggregated SAMs. First, the value added table presenting factors' compensation, taxes, and levies on production are decomposed by industry and factor categories. Second, the supply information, i.e. imports, transaction taxes and levies, and domestic supply, is detailed. Third, the use side, represented by the final consumption, exports, fixed capital formation, changes in inventories, and intermediate consumption, is also disaggregated into several categories of commodities. The next sections are devoted *inter alia* to discussing all of the above-mentioned steps.

#### 3.1 The Value Added

First, the economy-wide value added is presented through six (6) accounts using information from the African Statistical Yearbook (ASY).<sup>5</sup> For The Gambia, we rely on the industries' capital intensity from the 1990 SAM to split up the value added into labor and capital revenues (Table 5).

	Volue A	hobb			Factor Inter	nsity		
Sectors and industries	Value Added		Capital		Labo	or	<b>Total factor</b>	
Sector's and industries	Dalasi (millions)	%	Dalasi (millions)	%	Dalasi (millions)	%	Dalasi (millions)	%
Agriculture	6417	28.8	238	3.7	6179	96.3	6417	100
Mining & Quarrying	406	1.8	50	12.3	356	87.7	406	100
Industry	1278	5.7	158	12.4	1120	87.6	1278	100
Trade	4533	20.3	1193	26.3	3340	73.7	4533	100
Private Services	8751	39.3	3157	36.1	5594	63.9	8751	100
Government Services	894	4.0	0	0.0	894	100.0	894	100
All sectors and industries	22279	100.0	4796	21.5	17483	78.5	22279	100

Table 5: Decomposition of the value added, The Gambia SAM 2009

Source: Africa Statistical Yearbook (2011), and Jabara et al. (1992)

The decomposition of the value added by sector and industry (6) for Liberia uses data available in the ASY (2011); however, the lack of information on the labor force composition by industry and on the compensation of paid workers make it difficult to pursuit the exercise. We find a solution by relying on the structural comparison of countries' macroeconomic framework and come with the closest one to the Liberian economy. The comparison criteria chosen are the GDP per capita and the average real GDP growth over 2002 to 2010. We have found that the Liberian economy is closer to that of the Central Africa Republic (Table 1 in Appendix), and by applying the information from this economy, we are able to decompose the factor use into labor and capital by sector.

<sup>&</sup>lt;sup>5</sup> The ASY provides further decomposition of the value added by industry (10), but such level of details necessary impact more on the need of (scarce) information.

	Value A	ddad			Factor Int	ensity		
Sectors and	value A	uded	Capital		Labor		<b>Total factor</b>	
Industries	Liberian dollars (millions)	%	Liberian dollars (millions)	%	Liberian dollars (millions)	%	Liberian dollars (millions)	%
Agriculture	39318	67.2	1378	3.5	37940	96.5	39318	100
Mining &								
Quarrying	1013	1.7	129	12.7	885	87.3	1014	100
Industry	6305	10.8	3021	47.9	3284	52.1	6305	100
Trade	3007	5.1	250	8.3	2757	91.7	3007	100
Private Services	1681	2.9	1681	100.0	0	0.0	1681	100
Government Services	7200	12.3	9439	131.1	-2239	-31.1	7200	100
All sectors and industries	58524	100.0	15898	27.2	42627	72.8	58525	100

Table 6: Decomposition of the value added, Liberia SAM 2009

Source: ASY (2011); and Ministry of Planning & Economic Affairs from the third UN conference on least developed countries, 2001

The distribution of value added among sectors and industries in Sierra Leone also uses the ASY data. The decomposition of the value added between labor and capital was possible thanks to available data on employment and labor force drawn from the report on the 2004 population and housing census. Specifically, the distribution of the labor force into paid and self-employed by industry was helpful in the calculation and labor revenues. The self-employment labor is valued at the labor productivity by industry, which is the value added divided by the total labor force engage in the industry. The estimation of the labor compensation by industry made it possible to estimate the capital revenue residually.

Table 7: Decomposition of the value added, Sierra Leone SAM 2008

	Value ac	dad			Factor Int	ensity			
Sectors and	v alue ac	laea	Capital		Labo	Labor		Total factor	
industries	Leone (millions)	%	Leone (millions)	%	Leone (millions)	%	Leone (millions)	%	
Agriculture	3624040	59.7	127018	3.5	3497022	96.5	3624040	100	
Mining &									
Quarrying	171161	2.8	21711	12.7	149450	87.3	171161	100	
Industry	240934	4.0	115449	47.9	125485	52.1	240934	100	
Trade	587859	9.7	48858	8.3	539001	91.7	587859	100	
Private Services	216070	3.6	317152	- 118.4	-585073	218.4	-267921	100	
Government Services	1229717	20.3	1612150	94.1	101082	5.9	1713232	100	
All sectors and industries	6069781	100.0	2242338	36.9	3826967	63.1	6069305	100	

Source: ASY (2011); and Analytical report on employment and labor force (2006).

For the case of Mauritania, the ASY data has been the main source for the value added disaggregation while complemented by information drawn from other sources; in particular, in the decomposition of the value added between labor and capital (Table 8).<sup>6</sup>

	Value a	44.4			Factor Int	ensity		
Sectors and	v alue a	laaea	Capital		Labor		Total factor	
industries	Ouguiya (millions)	%	Ouguiya (millions)	%	Ouguiya (millions)	%	Ouguiya (millions)	%
Agriculture	149328	21	32852	22	116476	78	149328	100
Mining &								
Quarrying	145562	20	120816	83	24746	17	145562	100
Industry	106203	15	92397	87	13806	13	106203	100
Trade	81113	11	50290	62	30823	38	81113	100
Private Services	127505	18	93079	73	34426	27	127505	100
Government Services	116834	16	38555	33	78279	67	116834	100
All sectors and industries	726545	100	427989	59	298556	41	726545	100

Table 8: Decomposition of the value added, Mauritania SAM 2009

Source: ASY (2011)

#### 3.2 The Supply Side

The sectoral structure of imports (Table 9) is derived from data from the International Trade Center (ITC). Applying these shares to the total import in the macro SAM split up the aggregate import in the macro SAM. The WTO database provided information on The Gambia's Most Favored Nation (MFN) nominal duties rates for all the nomenclature of the products. In order to find the aggregate nominal duty rates for our specific products, three options were available: either we take the average duty rate, the median, or the mode. We considered usage of the mode of the nominal duty rate more realistic, and applied these rates to the import values by sectors and obtained the nominal import duties. We then turned to the Gambian government budget data from the 2009 annual report, which provides the total receipt from import duty. We distributed this amount proportionately to the products using the estimated nominal receipts from import duty. Finally, assuming that sales tax structure did not change significantly between 1990 and 2009, we applied the shares for the 1990 SAM to the amount of sales tax (after deducting the import duty) in the macro SAM. We ended up with the disaggregated sales tax for 2009.

<sup>&</sup>lt;sup>6</sup> See this website for the additional information: www.theodora.com/wfbcurrent/mauritania

	Import Value		Import	t Duty	Sales Tax		
Products	Dalasi (millions)	%	Dalasi (millions)	Rate (%)	Dalasi (millions)	Rate (%)	
ALL	6579	100.0	1141	17.3	1386	3.3	
Agriculture	307	4.7	54	17.5	317	3.1	
Mining & Quarrying	39	0.6	3	8.8	35	3.2	
Manufacturing	6180	93.9	1084	17.5	109	1.2	
Trade					0.0	0.0	
<b>Private Services</b>	53	0.8	0.0	0.0	925	4.7	

Table 9: Imports, sales taxes and import duties for The Gambia

Source: ITC 2009, WTO 2009, Gambian annual report 2009, Jabara et al. (1992)

Import shares and duties for Liberia are obtained from data provided by the Groupe de Recherche et d'Echanges Technologiques (GRET) study on the impacts of EU-ECOWAS EPA on the Liberian economy. Information on sales tax allocation by product was not available and therefore, we allocated it proportionally to the total supply of products (Table 10). Other stated, the more a product contributes to the total supply, the more is the sales tax levied on that product.

Table 10: Imports, sales taxes and import duties for Liberia

	Import	value	Import	duties	Sales	tax
Products	Liberian dollars (millions)	%	Liberian dollars (millions)	Rate (%)	Liberian dollars (millions)	Rate (%)
ALL	87001	100	8407	9.7	4 567	3.1
Agriculture	5620	6	884	15.7	189	0.4
Mining	4072	5	420	10.3	137	2.7
Industry	77309	89	7102	9.2	2600	3.1
Trade					0.0	0.0
Public services						
Private services					1641	22.8

Source: GRET 2007

As in the case of The Gambia, the International Trade Center provides us with the sectoral distribution of imports and duties for Sierra Leone. In order to break down the sales tax, we reasoned that it is allocated proportionately to the sectoral productions as well as according to the degree of the formality of the sector. The 2004 population and housing census of Sierra Leone provided some information on the sectoral employment formality in the economy. We imputed the sectoral tax to sectors and industries following the reasoning that the more a sector is formal labor intensive, the higher the sales tax is levied on that sector (Table 11).

	Import value		Import	duties	Sales tax		
Products	Leone (millions)	%	Leone (millions)	Rate (%)	Leone (millions)	Rate (%)	
ALL	2462501	100	279158	11.3	78207	0.9	
Agriculture	162040	7	23429	14.5	1405		
Mining	15778	1	1754	11.1	23532	12.6	
Industry	2280381	93	253493	11.1	34163	1.4	
Trade					5675	1.0	
Public services							
Private services	4302		482	11.2	13432	6.1	

Table 11: Imports, sales taxes and import duties for Sierra Leone

Source: Population and housing census Sierra Leone 2004, Sierra Leone trade policy review 2005

We use the ITC data for the import values and information from the Mauritanian budget and budgetary policy to breakdown the import duties and sales tax across sectors.

Table 12: Imports, sales taxes and import due	ties for Mauritania

	Import value		Import	duties	Sales tax		
Products	Ouguiya (millions)	%	Ouguiya (millions)	Shares (%)	Ouguiya (millions)	Share (%)	
ALL	531700	100	45717	100	21208	100	
Agriculture	33229	6,2	2743	6	1697	8	
Mining	1827	0,3	5486	12	6574	31	
Industry	430107	80,9	37488	82	8483	40	
Trade							
Public services							
Private services	66536				4454	21	

Source: ITC; Budget et Politique Budgétaire de la Mauritanie

## 3.3 The Use Side

On the use side, the final consumption from the macro SAM has been disaggregated using households' budget shares from the Gambian 2009 annual report (Central Bank of The Gambia, 2009). Using the ITC 2009 data on the decomposition of exports by product, we disaggregated the export value in the macro SAM. The gross fixed capital formation (GFCF) is imputed to the manufacturing industry, including the mining sector and the private services. Finally, the changes in the inventories account balance the final SAM.

The process remains the same for the other SAMs. Households' budget shares are used to disaggregate the total households' consumption of the macro SAM and are drawn from the Central Bank of Liberia 2006 data, in turn gleaned from different government entities including the Ministries of Planning & Economic Affairs, of Lands, Mines & Energy, and of Commerce & Industry; the Forestry Development Authority (FDA); Liberia Produce Marketing Corporation (LPMC); plus Bridgeway Corporation and Liberia Water & Sewer Corporation (LWSC). Then, information from the GRET's study allows us to

disaggregate exports across sectors. The treatment of the GFCF and the changes in inventories is similar to the procedure used for The Gambia.

The official statistics for Sierra Leone in 2011 provide us with information on the structure of the consumption budget of household. Using this information, the distribution of the aggregate private consumption by type of product was straightforward. The data from the ITC for Sierra Leone's trade are used to breakdown the aggregate export. As for the GFCF, the macro amount were allocated to the agricultural sector, the mining and the manufacturing industry sector. The changes in inventories served as a means of balancing the SAM. The use side of the Mauritanian SAM has been broken down using budget shares from the 2004 household survey data and reported by the national statistical office (Office National de la Statistique, 2006) served to disaggregate household consumption in the macro SAM. The disaggregating strategies employed for the previous countries' SAMs for the aggregate export, GFCF and changes in inventories were used for the Mauritanian SAM.

			Gam	bia			Liberia					Sierra Leone						
	Fin Consur 200	nption	Expo	orts	Invest	ment	Fina Consum 2009	otion	Exports	2009	Investmer	nt 2009	Fina Consum 2008	ption	Exports	2008	Investr 2003	
	Dalasi	(%)	Dalasi	(%)	Dalasi	(%)	Liberian dollars	(%)	Liberian dollars	(%)	Liberian dollars	(%)	Leone	(%)	Leone	(%)	Leone	(%)
ALL	22698	100	1581	100	12205	100	116639	100	17141	100	64518	100	5471281	100	843671	100	120636	100
Agriculture	6577	29	148	9			43671	37	16524	96			1 784761	33	115710	14	324037	27
Mining			2	0	826	7			343	2	5 416	8		0	77035	9	486055	40
Industry	2050	9	1404	89	5604	46	42485	36	274	2	47424	74	1101906	20	650804	77	396295	33
Trade	7406	33	7					0						0				
Public																		
Services	1428	6					7348	6					890984	16				
Private																		
Services																		
	5237	23	21	2	5775	47	23135	20			11678	18	1693630	31	122	0		

#### Table 13: Domestic consumption and export (in millions)

Source: Gambian annual report 2009 and ITC; Central Bank of Liberia 2005; Ministry of planning & economic affairs 2001; GRET 2007; Statistics Sierra Leone 2011; Sierra Leone trade policy review 2009; Children, the PRSP and public expenditure in Sierra Leone 2007; Office national de la statistic, Mauritanie 2011

	Mauritania								
	Final Cons	umption	Exp	orts	Investment				
	Ouguiya	(%)	Ouguiya	(%)	Ouguiya	(%)			
ALL	589 487	100	388 691	100		100			
Agriculture	265269	45	41565	10.7					
Mining	0		122275	31.5	37467	14			
Industry	235795	40	212939	54.8	132388	49.4			
Trade	0		0	0,0					
Private									
Services	88423	15	11912	3.1	98402	36.7			
Public									
Services									

#### Table 13: (cont.)

### 4. Conclusion

This paper has documented the construction of the Social Accounting Matrices (SAMs) for The Gambia, Liberia, Mauritania, and Sierra Leone. The building of SAMs for these economies is a challenging task given the lack of supply and use tables and integrated economic accounts. Our data was gathered from various sources and puzzled out into a single framework in order to ensure their consistency, and all discrepancies and gaps were resolved with adjustments made on the basis of knowledge or economic reasoning. The overall structure of the SAMs succeeds in reflecting the economic structure of the countries. Nevertheless, the limitations faced in building the SAMs without disaggregated national accounts data cannot be ignored.

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# Appendix

	GDP per capita	Annual real GDP		
	(PPP valuation,	growth (average	Input cost/PIB	Year of the SAM
	USD)	over 2002-10)		
Cape Verde	4188	6.1	55.7%	2002
Nigeria	2427	9.1	33.5%	2006
Cameroun	2303	3.2	88.6%	2007
Gambia	2013	5.2	50.0%	1990
Senegal	1711	3.9	81.0%	2005
Cote d'Ivoire	1699	1.2	74.1%	2006
Ghana	1526	5.9	81.6%	2005
Benin	1502	3.6	65.3%	2003
Burkina Faso	1289	5.5	55.2%	2004
Mali	1144	4.9	86.8%	2006
Guinea	1131	2.5	37.4%	1998
Guinea Bissau	1074	1.5	41.8%	2007
Togo	928	2.5	98.2%	2000
Sierra Leone	879	8.7	-	-
CAR	741	1.7	55.7%	2008
Niger	691	4.7	49.1%	2008
Liberia	552	1.7	-	-

Table 1: Comparing Selected Sub-Saharan Africa Countries

Sources: SAMs and African Economic Outlook (2011)

Table 2: GDP by economic activity in 2	2008 (percentage of	of GDP) for Sierra	Leone and Guinea Bissau

	Sierra Leone	Guinea Bissau
Agriculture	56.4%	48.2%
Mining and Quarrying	3.7%	0.0%
Manufacturing	2.6%	12.7%
Electricity and gas power	0.2%	0.4%
Construction	1.7%	0.8%
Wholesale and retail trade, hotels, etc.	7.8%	19.9%
Finance insurance and real estate	5.0%	4.4%
Transport and Communication	6.7%	4.4%
Public administration	3.6%	9.0%
Other services	12.3%	

Source: ASY 2013.

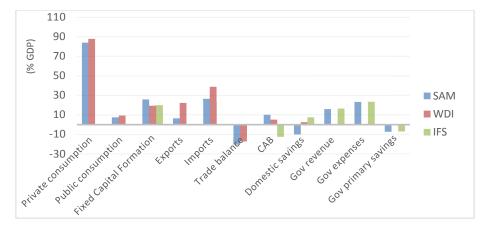


Figure 1: Comparison of macroeconomic aggregates from different sources for The Gambia

Figure 2: Comparison of macroeconomic aggregates from different sources for Liberia

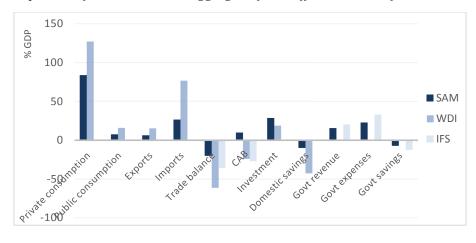


Figure 3: Comparison of macroeconomic aggregates from different sources for Sierra Leone

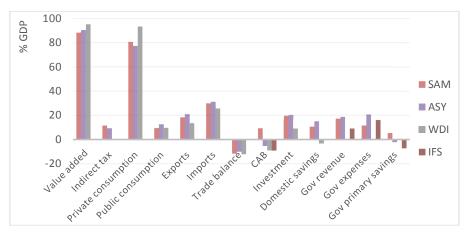
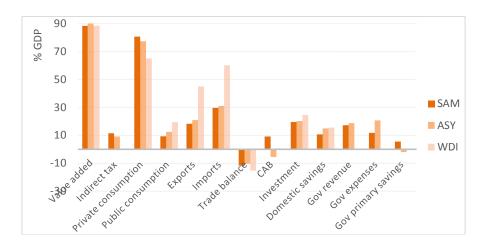


Figure 4: Comparison of macroeconomic aggregates from different sources for Mauritania



#### Data Sources

• African Statistical Yearbook

The ASY is the result of a joint collaboration between three major African regional organizations (African Development Bank, African Union Commission, and UN Economic Commission for Africa). The Yearbook is released annually and contains summary tables on social and demographic indicators, national accounts, monetary and financial statistics, economic infrastructure and investment climate and MDGs, for all African countries as well as country profiles. Data are generally arranged for the last eight years for which they are available.

• World Development Indicators :

The WDI database is the main World Bank collection of development indicators, compiled from officially-recognized international sources. It presents accurate global development data, including national, regional and global estimates on various topics i.e. agriculture and rural development, economy and growth, trade, energy and mining, external debt, financial sector, education, gender, health, public and private sector, etc. The WDI database is updated quarterly and contains annual series from 1960. In our quality check process for The Gambia, WDI provides data on GDP, final private consumption, final public consumption, fixed capital formation, stock changes, trade, current account balance, investment, domestic savings and external savings.

• International Financial Statistics

The International Financial Statistics (IFS) is the International Monetary Fund's (IMF) main statistical publication and a standard source of international statistics on domestic and international finance for over 200 countries and regional groups. IFS mostly provides data on balance of payments, international liquidity, money and banking, exchange and interest rates, prices, production, international transactions, government accounts, national accounts, and population. The IFS is updated monthly and contains over 30,000 yearly, quarterly and monthly time series from 1950s. In our process, IFS provides data (in

percentage of GDP) on fixed capital formation, current account balance, domestic savings, Government revenue, Government expenses, and Government primary savings. No data are available in IFS database regarding sectors share of value added.

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