Sudan

Khalid H. A. Siddig

1. Introduction

This document describes the construction of the Sudanese Input/Output Table (IOT), covering its data sources, the previous attempts, data availability, and describes the different stages of its development.

2. Previously Developed IOTs for Sudan

No recently produced official IOT have been published for the Sudanese economy. However, the first and the last official IOT have been produced in the early sixties by the Statistical Department in Sudan, after which this work was discontinued. During the last two decades, there were some unofficial attempts based on individual efforts by different researchers from Sudan as well as non-Sudanese, the successful from which are; the one that was rebuilt by (Alarcon, 1993) for the year 1981 based on (Diab, 1987) IOT of the year 1979, and the other one was developed by (Mostafa, 2000) as cited in Elbushra (2007) for the year 1991. Mostafa (2000), adopted the general planning rule of making use of the experience of other similar economies in compiling IOT by using the IOT coefficients of the Yemen economy, assuming the similarity between its characteristics and the ones of the Sudanese economy during that period of time. The most recent one is that of (Elbushra, 2007) for the year 2000, which was based on the coefficients of both Alarcon (1993) for the year 1981 and Mostafa (2000) for the year 1991. In all these IOTs, the maximum number of sector included as shown in the second column of Table (1), was nine (9) in which agriculture was only represented by one. This point eliminates the possibilities of addressing issues related to the subsectors in agriculture, given the Sudanese economy to be based on agriculture since long history.

Table 1. Sectors in the previously developed IOTs for Sudan

No.	Sectors in 2000's IOT	Sectors in 1990's IOT
1	Agriculture	Irrigated crops
2	Mining and quarrying	Mechanized rainfed crops
3	Manufacturing and handicrafts	Subsistence rainfed crops
4	Electricity and water	Wood forestry
5	Buildings and construction	Gum forestry
6	Commerce and hotels	livestock
7	Transportation and communication	Nonagricultural sectors
8	Finance and money	
9	Services	

Sources: Elbushra (2007) and Abdelgalil (2000)

Another important and different style of the Sudanese IOT has been produced by (Abdelgalil, 2000) for the year 1990 as shown the third column in Table (1). In his IOT

he aggregated the sectors in a specific way in order to serve his agricultural focused, and resources development's oriented objectives; therefore he reserved a separate sector for gum Arabic and another for wood, in addition to disaggregating the other agricultural sectors to three and aggregating all the nonagricultural sectors in one sector.

After having noted the history of the Sudanese IOTs development, the data, the assumptions on which it were based, and the sectors included, this study aimed at developing a recent and disaggregated IOT to be used not only for the specific purposes of the study, but also to as starting point for further similar research targeting the Sudanese economy. The following sections explains in details the data sources, it availability, and the assumptions used to develop the Sudanese IOT for the year 2004.

3. Data Sources for the Sudanese IOT

The Central Bureau of Statistics (CBS) is the main responsible authority to produce statistical datasets in Sudan. Other official institutions are also producing statistical publications like the Ministry of Finance and National Economy (MFNE), Central Bank of Sudan (CBoS), Ministry of Agriculture and Forestry (MAF), General Administration of Customs (GAC), and others. Data from all these sources have been used in the process of the Sudanese IOT construction. As in many developing countries, data from different sources are often inconsistent due to different objectives, methods of collection, and level of aggregation. Therefore, in order to have a consistent economy-wide data base that can satisfy certain criteria, with a relatively fine level of disaggregation, all the available data from the different sources need to be incorporated, cross-checked, and when necessary adjusted.

The most important is the decision about the reference data source, which determines the control totals to which all other data will be re-assigned and balanced. Accordingly in the case of this study, three major sources of data were used to construct the Sudanese IOT for 2004. The CBS was the primary data source. Their data contains tables on National Accounts giving details on Gross Domestic Product at factor cost, total Domestic Supply, Gross Fixed Capital Formation, the Balance of Payments, Government Statistics and External Trade Statistics. This was complemented by the Annual Reports, Economic and Financial Statistics Review, and Foreign Trade Statistical Digest published by the CBoS and the Time Series of the main Food and Oil Seeds Crops produced by the Administration of Agricultural Statistics (AAS) in the MAF. The Financial and Economic Review published by the MFNE as part of the budget document series provided information on government operations on both revenues and recurrent expenditures. Tax data was derived from various reports, but mainly from the Tax Divan and GAC beside the CBS and CBoS. The CBoS and MFNE publications also provide statistics on external loans and grants, capital flows and the external reserve position. Inconsistencies still persist in the available data from the different institutions necessitating the employment of some data manipulations to enhance consistency between economic variables.

4. Data Availability and Assumptions

Data collection for this study has been conducted in the second half of the year 2006, before which the Sudanese IOT was expected to be available in the CBS. After having realized the real data availability situation in Sudan, the decision has been made to construct both the IOT and SAM from scratch. Therefore this section describes the required data, the available data, and the assumptions used to fill the gaps in order to produce the Sudanese IOT and social accounting matrix (SAM) for the year 2004.

The first step was the selection of the base year. At the time of data collection in 2006, the CBS was finalizing the data sets of the year 2004 which became ready late 2006 therefore, this study used 2004 as the base year. This selection was found to be plausible, as it allow the creation of a recent IOT for Sudan after the first one of the mid sixties that has been produced by the national Statistical office at that time, 2004 is a normal year in terms of economic stability, the contribution of oil in the GDP and trade, and the agricultural production. Therefore it could be used as a proxy for the recent history of the Sudanese economy after the extraction of oil and the openness of the economy to the foreign investments flows.

4.1 Data Requirements

Table (2) explains the data requirements for social accounting matrix (SAM) construction taking an aggregated version of a SAM in which the data is classified into three categories according to the level of disaggregation with which it was available in the previously mentioned sources of data as follows:

1) Cells with category (1) means that the corresponding data is available in one or more of the previously mentioned sources in a good level of disaggregation. This category includes trade data (exports, imports, and import tariffs), which is available at the CBS classified according to the International Standard Industrial Classification (ISIC) with eight digits of disaggregation considering commodities and the trade partners. In the SAM construction process, an effort here have been made to aggregate the data to the (33) sectors of the Sudanese SAM. Additionally import tariffs were also available with an acceptable level of disaggregation in the GAC allowing the data to be cross-referenced with the one of the CBS.

2) Cells with category (2) means that the corresponding data is scattered over more than one source, with different level of aggregation across sources. Therefore a great deal of effort have done to make it consistent and complete to the (33) sectors of the Sudanese SAM. Cells of category (2) include the majority of the data in Table (5.1) such as the domestic sales, indirect taxes, government consumption, etc…

3) Cells of category (3) mean that the corresponding data is either unavailable in desired level of disaggregation, or disaggregated but not recent. This category comprises the intermediate consumption and household consumption.

Details about the available data and assumptions used to fill the data gaps will be discussed in the following section (3.2).

Table 2. An aggregated Social Accounting Matrix

	Activities	**Commodities**	**Factor**	**Household**	**Enterprises**	**Government**	**Investment**	**ROW**	**Total**
Activities		**(2)** Domestic Sales							Total Sales
Commodities	**(3)** Intermediate Consumption			**(3)** Household Consumption		**(2)** Government Consumption	**(2)** Investment Demand	**(1)** Exports	Domestic Demand
Factor	**(2)** Value Added							**(2)**Foreign Factor Income	Factor income
Household			**(2)** Labour Income		**(2)** Distributed Profit	**(2)** Transfers		**(2)** Foreign Transfers	Household Income
Enterprises			**(2)** Capital Income	**(2)** Transfers		**(2)** Transfers		**(2)** Foreign Transfers	Enterprises Income
Government	**(2)** Indirect Taxes	**(1)** Import Tariffs	**(2)** Taxes on Profits	**(2)** Income Taxes	**(2)** Corporate Taxes			**(2)** Foreign Grants	Government Income
Investment				**(2)** Household Saving	**(2)** Enterprises Saving	**(2)** Government Saving		**(2)** Foreign Saving	Total Savings
Rest of the world		**(1)** Imports	**(2)** Factor Payments	**(2)** Transfers	**(2)** Current Transfers Abroad	**(2)** Transfers	**(2)** Net Lending		Receipts From Abroad
Total	Gross Output	Total Commodity Supply	Factor Outlay	Total Household Expenditure	Total Enterprises Expenditure	Total Government Expenditure	Total Investment	Foreign Exchange Earning	

Source: Author

4.2 The Agricultural Sectors' Data

Agricultural sector data are available in a detailed format at the Administration of Agricultural Statistics (AAS) in the MAF, while it is also available in an aggregated format at the CBS. As previously stated the CBS was considered the basic source, therefore this data was mapped according to the CBS totals in order to have the sectors disaggregated as Table (3) shows. The final agricultural sector in the 2004 IOT and SAM were ten (10) sectors, therefore in the CBS data (column one in Table 3) was disaggregated to ten, while the (41) sectors on MAF (column two in Table 3) were aggregated to the ten.

Table 3. Mapping the Agricultural Sectors' Data to the 2004 IOT's Sectors

Sectors in the CBS data		Sectors in the MAF data		Sectors in the 2004's IOT	
1	Irrigated crops	1	Sorghum	1	Cereal
		2	Sesame	2	Oilseeds
		3	Wheat	3	Wheat
		4	Maize	1	Cereals
		5	Groundnuts	2	Oilseeds
		6	Millet	1	Cereals
		7	Cotton	4	Cotton
		8	Sugar cane	5	Sugar cane
		9	Egyptian beans	6	Other crops
		10	Fruits	6	Other crops
		11	Vegetables	6	Other crops
		12	Sunflower	2	Oilseeds
2	Mechanized rainfed crops	13	Sesame	2	Oilseeds
		14	Sorghum	1	Cereals
		15	Cotton	4	Cotton
		16	Millet	1	Cereals
		17	Sunflower	2	Oilseeds
3	Rainfed traditional crops	18	Sorghum	1	Cereals
		19	Sesame	2	Oilseeds
		20	Maize	1	Cereals
		21	Groundnuts	2	Oilseeds
		22	Wheat	3	Wheat
		23	Millet	1	Cereals
		24	Fruits	6	Other crops
		25	Vegetable	6	Other crops
4	Minor crops	26	Melon seeds	6	Other crops
		27	Cassava	6	Other crops
		28	Liusine	6	Other crops
		29	Hibiscus	6	Other crops
		30	Yam	6	Other crops
		31	Chick beans	6	Other crops
		32	Bean	6	Other crops
		33	Rice	6	Other crops

Sectors in the CBS data		Sectors in the MAF data		Sectors in the 2004's IOT	
		34	Castor	6	Other crops
		35	Gowar	6	Other crops
		36	Lentils	6	Other crops
5	Livestock	37	Livestock	7	Livestock
		38	Poultry products	7	Livestock
		39	Milk and dairy production	8	Milk
6	Fishery	40	Fishery	9	Fishery
7	Forestry	41	Forestry	10	Forestry

Source: Author

Lack of data and/or inconsistency in other related areas hinders the proposed disaggregation of cereals and Oilseeds to its corresponding crops and the existence of Fruits, Vegetable, poultry, and Gum-Arabic as separate sectors in the 2004's IOT.

4.3 Non-Agricultural Sectors' Data

The available data for the Non-agricultural sectors is basically CBS data following the sectors' classification of the National Income Department in the CBS. Non-agricultural sectors in the 2004's SAM as shown in Table (5.4) are 24 sectors, including ten (10) industrial sectors, thirteen (13) service sectors, and one zero-valued sector for Dwellings[1] which is also service sector.

For both industrial and service sectors, minor adjustments have been done in order to include it in the IOT e.g. Non-metallic industries mapped to other manufacturing industries, Road and Rail transports as well as Pipe lines has been mapped to Transport nec, as other similar minor aggregation have don as shown in Table (5.4). Output data for all these sectors were available, however problems with missing data have been faced in other related data like the intermediate consumption, household consumption and value added.

[1] The inclusion of dwellings as a zero-valued sector is recommended by GTAP for all countries without dwellings' data.

Table 4. Mapping the Non-Agricultural Sectors' Data to the 2004 IOT's Sectors

Sectors in CBS's Data		Sectors in 2004's IOT	
1	Petroleum	1	Petroleum and natural gas
2	quarrying Other mining and	2	Other mining and quarrying
3	Food , beverages and tobacco	3	Food , beverages, and tobacco
4	Textile, leather, and wearing apparels	4	Textile, leather, and wearing apparels
5	Chemicals including petroleum and plastic products	5	Chemical, rubber, and plastic products
6	Wood and wood products including furniture	6	Wood and wood products
7	Paper and paper products printing and publishing	7	Paper and paper products printing and publishing
8	Basic metal industries	8	Metal industries
9	Fabricated metal products machinery and equipment	9	Machinery and equipment
10	Non-metallic industries	10	Other manufacturing industries
11	Other manufacturing industries	10	Other manufacturing industries
12	Electricity	11	Electricity
13	Building and construction	12	Building and construction
14	Commerce	13	Trade services
15	Air transport	14	Air transport
16	Water transport	15	Water transport
17	Road transport	16	Transport nec
18	Rail transport	16	Transport nec
19	Pipe line	16	Transport nec
20	Communications	17	Communication
21	Finance	18	Finance services
22	Insurance	19	Insurance
23	Business services	20	Business services
24	Water	21	Water
25	Public administration and defense services	22	Public administration, defense, education, and health (PADEH)
26	Education services	22	PADEH
27	Health services	22	PADEH
28	Sanitary and other similar services	22	PADEH
29	Social recreational and related community services	23	Social recreational and other services (SROS)
30	Real estate	23	SROS
31	Restaurants and hotels	23	SROS
32	Social and other community services	23	SROS
		24	Dwellings

Source: Author

4.4 Value-Added Data

The National Income Department in the CBS includes value added data in the table "GDP and Factor Income" for the same sectors in tables (3 and 4). Factors include labour, capital and land. The factor accounts pay rents on capital and land to enterprises and wages and salaries to households, which are represented by the factors columns of the SAM. Factor accounts may also pay factor taxes to the government and factor payments to the rest of the world account. The GDP at factor cost is a lump sum figure which, after some manipulations can yield value-added paid to labour (households) and value added paid to capital and land (enterprises). In this study, compensation of employees was used as a proxy for labour, while net operating surplus was used as proxy for capital in all correspondence. Given the total value added in the same table of the CBS, the remainder after subtracting the compensation of employees and the net operating surplus from the total value added was treated as a proxy for land for all sectors in the CBS data as well as their related aggregation and disaggregation.

4.5 Households Consumption

As shown in Table 2, the household consumption belongs to category (3) beside the intermediate consumption. Household consumption data specifically is available and in over disaggregated manner especially in terms of commodities, but it lacks being recent data. The last available household consumption data was the one of the Sudan Household Expenditure Survey, which have been done in 1978. It has been conducted by the CBS for 12 months covering the northern states, because the south at that time was unsafe. The questionnaire included detailed demographic questions beside detailed household consumption items covering 173 consumption goods for three[2] household income categories (low, medium, and high income households).

The CBS is accustomed to use the consumption weights of this survey to calculate the household consumption by sector and household category for recent years. Accordingly these weights are confidentially obtained and used to calculate the aggregated version that fits to the level of aggregation used for this study, hence the 173 consumption goods have been aggregated to 34 commodities, while the household categories remains same as three.

To be able to do this, two assumptions has been adopted by this study; firstly, although the consumption weights are calculated from the 1978's survey which is thirty (30) years old, this study assumed that no big change in the consumption behavior in percentage terms has taken place during this period, therefore the weights of 1978 are used for 2004. Secondly, because the 1978 survey was conducted only in the northern states excluding southern sates due to the civil war, this study assumed the similarity between the consumption behavior between the Sudanese household in the north and the south.

Based on these two assumptions the household consumption data was produced by disaggregating the total household consumption data of the CBS according to the aggregated weights shown in the Table 5.

[2] The version contributed to GTAP African Data Base Project aggregates the three households groups into one.

Table 5. The aggregated consumption weights for the 34 commodities

Consumption Goods	High income HHs	Medium income HHs	Low income HHs
Wheat	0.026634	0.033023	0.028228
Cereals	0.009469	0.028718	0.045890
Cotton	0.000000	0.000000	0.000000
Oil seeds	0.001852	0.001987	0.002852
Other crops	0.123173	0.160080	0.158280
Livestock products	0.222403	0.257700	0.264096
Raw milk	0.000330	0.000369	0.000336
Forestry products	0.000000	0.000000	0.000000
Sugar	0.027923	0.033689	0.039536
Food , beverages, and tobacco	0.149299	0.141474	0.144961
Fishery products	0.005783	0.004951	0.004920
Other mining and quarrying products	0.003142	0.004237	0.005347
Petroleum products	0.034391	0.009114	0.010132
Textile, wearing apparel & leather	0.055308	0.046261	0.030858
Wood and wood products	0.011215	0.005712	0.001517
Paper products and publishing	0.000000	0.000000	0.000000
Chemical and plastic products	0.000000	0.000000	0.000000
Metal and metal products	0.000000	0.000000	0.000000
Machinery and equipment	0.002388	0.000326	0.000576
Other manufactured products	0.057119	0.052627	0.052636
Electricity	0.024815	0.013889	0.006308
Water	0.007100	0.009971	0.012344
Building and construction	0.000000	0.000000	0.000000
Trade	0.000000	0.000000	0.000000
Transport nec	0.138904	0.099986	0.097052
Water transport	0.000000	0.000000	0.000000
Air transport	0.000000	0.000000	0.000000
Communication	0.003804	0.001392	0.000735
Finance	0.000000	0.000000	0.000000
Insurance	0.000000	0.000000	0.000000
Business services	0.000000	0.000000	0.000000
Recreational and other services	0.066718	0.068203	0.070128
Public administration, defense, education and health	0.028228	0.026293	0.023268
Dwellings	0.000000	0.000000	0.000000
Total	1.000000	1.000000	1.000000

Source: Author

4.6 Intermediate Consumption

Because the number of activities and commodities in the Sudanese SAM of this study are the same, the intermediate consumption matrix is squired, in which data for intermediate consumption totals by sector is available after minor calculations and mappings in the CBS as well as the MOAF data. But the reason behind having the intermediate consumption data categorized as (3) in Table 2, is the fact that no intermediate consumption data by sectors-and-

commodities are available in all data sources in Sudan. Accordingly, this study relied on the representative table[3] of GTAP Data Base Version 6. In order to use the representative table's data to fill the missing data of this study's IOT some adjustments have been made to insure the compatibility, these adjustment are the following:

1. The intermediate consumptions matrix of the representative table distinguishes between the domestic and imported intermediate consumption, while the Sudanese intermediate consumption aggregates by sector were prepared as composite. Therefore the two intermediate consumption matrices of GTAP has been summed together to produce a composite intermediate consumption matrix.
2. The number of sectors and commodities in the representative table are 57, while this study's sectors are only 34; therefore the 57 sectors of the representative table have been carefully aggregated to 34 sectors[4].
3. Afterwards, the intermediate consumption coefficients are calculated letting them to be summed to one column-wise, and hence used to disaggregate the composite intermediate consumption totals.

Having approved all the assumptions with regard to the mapping procedures, household consumption, value added, and the intermediate consumption, this study is able to produce the first version of the Sudanese IOT and SAM for the year 2004.

Given the limitations and inconsistencies of the available data, some columns and rows of the generated SAM show some deviations, making it difficult for the solver of the balancing program to find an optimal solution. To cope with this problem and to provide the solver with a better starting point, some adjustments are made. The input-output matrix is cleared of unreasonable entries and some negligible exports and imports are netted out from their respective counter flows. After this adjustment subroutine, the obtained SAM is balanced using SAMBAL.TAB[5]. Moreover the GAMS' code of the CGE model of this study also includes a subroutine for ensuring that the SAM is balanced employing the Cross-entropy[6] estimation approach.

After that, the SAM and IOT have been revised by the African Data Base Project (ADP) in GTAP before having it included in the project's data base and the Development Strategy and Governance Division (DSGD) of the International Food Policy Institute (IFPRI), in addition to collaboration with many Sudanese experts worldwide during the different stages of its development process. Therefore some modifications, regrouping, and reallocations have taken place in order to have the final version of the Sudanese IOT and SAM for the year 2004. The aggregated SAM, which is recalculated after balancing the Micro-SAM using the Cross-entropy estimation method, is presented below in table 6.

A detailed mapping between the Sudanese IOT sectors and GTAP sector is shown in table 7 below.

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[3] More detailed about the representative tables could obtained from chapter 14 of Dimaranan (2006). *Global Trade, Assistance, and Production: The GTAP 6 Data Base*, Center for Global Trade Analysis, Purdue University.

[4] The mapping between the 57 sectors of GTAP and the Sudanese IOT 34 sectors is shown in Table 6 below.

[5] SAMBAL is a GEMPACK program for balancing square SAMs developed by Mark Horridge, October 2003, and revised in May 2008.

[6] Details are available in Robinson et al. (2000).

Table 6. The 2004 aggregated SAM for Sudan (SDG Millions)

	1	2	3	4	5	6	7	8	9	10	11	12	13
1		93094.1											93094.1
2	31321.1			47118.3		6508.1					9766.4	12667.0	107380.9
3	61135.9										5.4		61141.3
4			25026.9		18653.5	2148.9					4494.8		50324.1
5			36109.9								58.0		36167.9
6					3936.9		1804.1	1364.9	1134.5	-727.8	2569.2		10081.8
7				100.1	1704.0								1804.1
8	1364.9												1364.9
9		1134.5											1134.5
10	-727.8												-727.8
11		13152.3	4.5	1234.9	2618.8	759.5							17770.0
12				1870.8	9254.6	665.4					876.2		12667.0
13	93094.1	107380.9	61141.3	50324.1	36167.9	10081.8	1804.1	1364.9	1134.5	-727.8	17770.0	12667.0	

Source: Author

Legend:

1	Activities	6	Government	10	Subsidies (electricity)
2	Commodities	7	Direct tax	11	Rest of the world
3	Factors of production	8	Indirect tax (less tariffs)	12	Saving and investment
4	Households	9	Import tariffs	13	Total
5	Enterprises				

Table 7. Concordance tables between GTAP sectors and the Sudanese IOT sectors.

1) GSC2 Sectors Defined by Reference to the CPC				Sudan IO Sectors	
No.	**Code**	**Code**	**Description**	**No.**	**Description**
2	wht	0111	Wheat and meslin	**1**	**Wheat**
3	gro	0112	Maize (corn)	**2**	**Cereals (Maize, Sorghum, and Millet)**
		0115	Barley		
		0116	Rye, oats		
		0119	Other cereals		
23	pcr	2316	Rice, semi- or wholly milled		
1	pdr	0113	Rice, not husked		
		0114	Husked rice		
7	pfb	0192	Plant Fibres: cotton, flax, hemp, sisal and other raw vegetable materials used in textiles	**3**	**Cotton**
5	osd	014	Oil seeds and oleaginous fruit	**4**	**Oilseeds (Groundnuts, Sesame, and Sun-flower)**
4	v_f	012	Vegetables	**5**	**Other Crops**
		013	Fruit and nuts		
6	c_b	018	Plants used for sugar manufacturing		
8	ocr	015	Live plants; cut flowers and flower buds; flower seeds and fruit seeds; vegetable seeds		
		016	Beverage and spice crops		
		017	Unmanufactured tobacco		
		0191	Cereal straw and husks, unprepared, whether or not chopped, ground, pressed or in the form of pellets; swedes, mangolds, fodder roots, hay, lucerne (alfalfa), clover, sainfoin, forage kale, lupines, vetches and similar forage products, whether or not in the form of pellets		

		0193	Plants and parts of plants used primarily in perfumery, in pharmacy, or for insecticidal, fungicidal or similar purposes		
		0194	Sugar beet seed and seeds of forage plants		
		0199	Other raw vegetable materials		
9	ctl	0211	Bovine cattle, sheep and goats, horses, asses, mules, and hinnies, live	**6**	**Livestock Poultry Products (Live & Meat) Dairy Production, Birds Eggs, Natural Honey and other animal products**
		0299	Bovine semen		
10	oap	0212	Swine, poultry and other animals, live		
		0292	Eggs, in shell, fresh, preserved or cooked		
		0293	Natural honey		
		0294	Snails, live, fresh, chilled, frozen, dried, salted or in brine, except sea snails; frogs' legs, fresh, chilled or frozen		
		0295	Edible products of animal origin n.e.c.		
		0297	Hides, skins and furskins, raw		
		0298	Insect waxes and spermaceti, whether or not refined or coloured		
12	wol	0296	Raw animal materials used in textile		
19	cmt	21111	Meat of bovine animals, fresh or chilled		
		21112	Meat of bovine animals, frozen		
		21115	Meat of sheep, fresh or chilled		
		21116	Meat of sheep, frozen		
		21117	Meat of goats, fresh, chilled or frozen		
		21118	Meat of horses, asses, mules or hinnies, fresh, chilled or frozen		
		21119	Edible offal of bovine animals, swine, sheep, goats, horses, asses, mules or hinnies, fresh, chilled or frozen		
		2161	Fats of bovine animals, sheep, goats, pigs and		

			poultry, raw or rendered; wool grease		
20	omt	21113	Meat of swine, fresh or chilled		
		21114	Meat of swine, frozen		
		2112	Meat and edible offal, fresh, chilled or frozen, n.e.c.		
		2113	Preserves and preparations of meat, meat offal or blood		
		2114	Flours, meals and pellets of meat or meat offal, inedible; greaves		
		2162	Animal oils and fats, crude and refined, except fats of bovine animals, sheep, goats, pigs and poultry		
11	rmk	0291	Raw milk	**7**	**Raw milk**
13	for	03	Forestry, logging and related service activities	**8**	**Forestry**
24	sgr	235	Sugar	**9**	**Sugar**
21	vol	2163	Soya-bean, ground-nut, olive, sunflower-seed, safflower, cotton-seed rape, colza and mustard oil, crude	**10**	**Food , Beverages, and Tobacco Manufacturing**
		2164	Palm, coconut, palm kernel, babassu and linseed oil, crude		
		2165	Soya-bean, ground-nut, olive, sunflower-seed, safflower, cotton-seed, rape, colza and mustard oil and their fractions, refined but not chemically modified; other oils obtained solely from olives and sesame oil, and their fractions, whether or not refined, but not chemically modified		
		2166	Maize (corn) oil and its fractions, not chemically modified		
		2167	Palm, coconut, palm kernel, babassu and linseed oil and their fractions, refined but not chemically modified; castor, tung and jojoba oil and fixed vegetable fats and oils (except maize oil) and their fractions n.e.c., whether or not refined, but not chemically modified		

		2168	Margarine and similar preparations
		2169	Animal or vegetable fats and oils and their fractions, partly or wholly hydrogenated, inter-esterified, re-esterified or elaidinised, whether or not refined, but not further prepared
		217	Cotton linters
		218	Oil-cake and other solid residues resulting from the extraction of vegetable fats or oils; flours and meals of oil seeds or oleaginous fruits, except those of mustard; vegetable waxes, except triglycerides; degras; residues resulting from the treatment of fatty substances or animal or vegetable waxes
22	mil	22	Dairy products
25	ofd	212	Prepared and preserved fish
		213	Prepared and preserved vegetables
		214	Fruit juices and vegetable juices
		215	Prepared and preserved fruit and nuts
		2311	Wheat or meslin flour
		2312	Cereal flours other than of wheat or meslin
		2313	Groats, meal and pellets of wheat
		2314	Cereal groats, meal and pellets n.e.c.
		2315	Other cereal grain products (including corn flakes)
		2317	Other vegetable flours and meals
		2318	Mixes and doughs for the preparation of bakers' wares
		232	Starches and starch products; sugars and sugar syrups n.e.c.
		233	Preparations used in animal feeding
		234	Bakery products
		236	Cocoa, chocolate and sugar confectionery
		237	Macaroni, noodles, couscous and similar farinaceous products

		239	Food products n.e.c.
26	b_t	24	Beverages
		25	Tobacco products

2) GSC2 Sectors Defined by Reference to the ISIC, Rev.3				**Sudan IO Sectors**	
No.	**Code**	**Code**	**Description**	**No.**	**Description**
14	fsh	015	Hunting, trapping and game propagation including related service activities	**11**	**Fishery**
		05	Fishing, operation of fish hatcheries and fish farms; service activities incidental to fishing		
15	Col,coa	101	Mining and agglomeration of hard coal	**12**	**Other Mining and Quarrying**
		102	Mining and agglomeration of lignite		
		103	Mining and agglomeration of peat		
18	omn	12	Mining of uranium and thorium ores		
		13	Mining of metal ores		
		14	Other mining and quarrying		
17	gas	111	Extraction of crude petroleum and natural gas (part)		
		112	Service activities incidental to oil and gas extraction excluding surveying (part)		
44	gdt	402	Manufacture of gas; distribution of gaseous fuels through mains		
		403	Steam and hot water supply		
16	oil	111	Extraction of crude petroleum and natural gas (part)	**13**	**Petroleum and natural gas**
		112	Service activities incidental to oil and gas extraction excluding surveying (part)		
32	p_c	231	Manufacture of coke oven products		
27	tex	17	Manufacture of textiles	**14**	**Textile, wearing apparel & leather**
		243	Manufacture of man-made fibres		
28	wap	18	Manufacture of wearing apparel; dressing and dyeing of fur		

29	lea	19	Tan and dressing of leather; manufacture of luggage, handbags, saddlery, harness and footwear		
30	lum	20	Manufacture of wood and of products of wood and cork, except furniture; manufacture of articles of straw and plaiting materials	**15**	**Wood and Wood Products**
31	ppp	21	Manufacture of paper and paper products	**16**	**Paper and paper products printing and Publishing**
		22	Publishing, printing and reproduction of record media		
33	crp	241	Manufacture of basic chemicals	**17**	**Chemical, rubber, plastic products**
		242	Manufacture of other chemical products		
		25	Manufacture of rubber and plastics products		
35	i_s	271	Manufacture of basic iron and steel	**18**	**Metal industries**
		2731	Casting of iron and steel		
36	nfm	272	Manufacture of basic precious and non-ferrous metals		
		2732	Casting of non-ferrous metals		
37	fmp	28	Manufacture of fabricated metal products, except machinery and equipment		
41	ome	29	Manufacture of machinery and equipment n.e.c.	**19**	**Machinery and Equipment**
		31	Manufacture of electrical machinery and apparatus n.e.c.		
		33	Manufacture of medical, precision and optical instruments, watches and clocks		
38	mvh	34	Manufacture of motor vehicles, trailers and semi-trailers	**20**	**Other manufacturing industries**
39	otn	35	Manufacture of other transport equipment		
40	ele	30	Manufacture of office, accounting and computing machinery		
		32	Manufacture of radio, television and communication equipment and apparatus		
		232	Manufacture of refined petroleum products		
		233	Processing of nuclear fuel		

34	nmm	26	Manufacture of other non-metallic mineral products		
42	omf	36	Manufacturing n.e.c.		
		37	Recycling		
43	ely	401	Production, collection and distribution of electricity	**21**	**Electricity**
45	wtr	41	Collection, purification and distribution of water	**22**	**Water**
46	cns	45	Construction	**23**	**Building and Construction**
47	trd	50	Sales, maintenance and repair of motor vehicles and motorcycles; retail sale of automotive fuel	**24**	**Trade Services**
		51	Wholesale trade and commission trade, except of motor vehicles and motorcycles		
		521	Non-specialized retail trade in stores		
		522	Retail sale of food, beverages and tobacco in specialized stores		
		523	Other retail trade of new goods in specialized stores		
		524	Retail sale of second-hand goods in stores		
		525	Retail trade not in stores		
		526	Repair of personal and household goods		
		55	Hotels and restaurants		
48	otp	60	Land transport; transport via pipelines	**25**	**Transport nec**
		63	Supporting and auxiliary transport activities; activities of travel agencies		
49	wtp	61	Water transport	**26**	**Water transport**
50	atp	62	Air transport	**27**	**Air transport**
51	cmn	64	Post and telecommunications	**28**	**Communication**
52	ofi	65	Financial intermediation, except insurance and pension funding	**29**	**Finance Services**
		67	Activities auxiliary to financial intermediation		

53	isr	66	Insurance and pension funding, except compulsory social security	**30**	**Insurance**
54	obs	K	Real estate, renting and business activities	**31**	**Business services**
55	ros	92	Recreational, cultural and sporting activities	**32**	**Social Recreational and other Services**
		93	Other service activities		
		95	Private households with employed persons		
56	osg	75	Public administration and defense; compulsory social security	**33**	**Public Administration, defense, education, and health**
		80	Education		
		85	Health and social work		
		90	Sewage and refuse disposal, sanitation and similar activities		
		91	Activities of membership organizations n.e.c.		
		99	Extra-territorial organizations and bodies		
57	dwe	n.a.	Dwellings	**34**	**Dwellings**

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