

A Social Accounting Matrix for India, 2005-06

Basanta K Pradhan¹, M.R Saluja² & Yashobanta Parida^{3,*}

¹Institute of Economic Growth, Delhi University Enclave, Delhi-110007, India

²India Development Foundation, Gurgaon-122002, Haryana, India

³Institute of Economic Growth, Delhi University Enclave, Delhi- 110007, India

*Corresponding author: Institute of Economic Growth, Delhi University Enclave, Delhi-110007, India. Tel: 91-11-2766-6364 ext-231. E-mail: yashparida@gmail.com

Received: November 10, 2013 Accepted: December 15, 2013 Published: February 13, 2014

doi:10.5296/rae.v6i1.4528 URL: <http://dx.doi.org/10.5296/rae.v6i1.4528>

Abstract

This paper aims to construct a Social Accounting Matrix (SAM) for India and explain the methodology in the process. This SAM consists of 41 sectors of the economy, two factors of production, nine occupational categories and ten expenditure categories of households. The SAM has been constructed for the Indian economy for 2005-06. The distribution of income is based on data for 2004-05. The electricity sector has been decomposed into three sectors column-wise, namely hydro, nuclear and thermal. Besides the subdivision of electricity sector, the other energy sector has also been divided into coal and lignite, crude oil and natural gas, and petroleum products, which will be useful for energy modeling. The expenditure wise division of households will help in modeling inclusive growth issues.

Keywords: SAM; household categories; energy Sectors; India

JEL Classification: R15; R21; Q41

1. Introduction

This paper describes the construction of the SAM for the Indian economy for 2005-06. A SAM is a square matrix, which can be interpreted as a complete description of the entire market plus some non-market transactions of commodities and primary factors of production within an economy and with outside agents. It consists of row-and-column accounts that represent different production activities, economic agents, institutions, and policy instruments in an economy. A SAM is based on the principle of balance between expenses (shown in columns) and receipts (shown in rows) for each sector of the economy. In practice, a SAM is the natural extension of Leontief's input-output (I-O) accounting system, and includes not only inter-industry transactions but also payments to factors of production, expenditures by households, transfers and subsidy expenditures of government, and transactions with the rest of the world. Building a SAM requires compiling different types of statistical data from multiple sources and reconciling data from these sources. The SAMs are now widely used in economic modeling and, in particular, in Computable General Equilibrium (CGE) models.

The objective of our study is to construct a SAM for the Indian economy for the year 2005-06. To our knowledge there is no SAM constructed for India for the year 2005-06. In order to construct the SAM for 2005-06 we have used Input-Output (I-O) data for 2006-07. We have changed the I-O table backward from 2006-07 to 2005-06. Here, we have segregated the households by nine occupational categories (Appendix Table 1) and by ten expenditure categories (Appendix Table 2). One of the major purposes of our SAM is to separate electricity sectors into three different sub-sectors viz. hydro, nuclear and thermal. We did it only for column-wise as in India the supply of electricity does not distinguish among the sources of generation. However, one can do it, following others in the literature by assuming the proportion in use as same in the proportion in production. The other SAMs for India which have done this division (here both row-wise and column-wise) is Pal et al. (2012) and Ojha et al (2009). Pal et al (2012) also has Biomass as a separate sector. We have not separated biomass as well. Biomass consists of crop residuals, dung, firewood, paper residual and food and beverage residual. These are all very heterogeneous products. Except for firewood, all these are byproducts. We have therefore taken these products along with main sectors e.g. firewood with forestry and dung with animal husbandry.

We have used the distribution of income by occupation category from the income and expenditure survey conducted by the NCAER for 2004-05. The income distribution for all other recent SAMs for India are based on the Micro Impact of Macro and adjustment Policies in India (MIMAP) Survey conducted by the NCAER for 1994-95 (see Pradhan and Roy, 2003). The present SAM consists of 41 sectors of the economy with two factors of production and five categories of rural occupational households and four urban occupational households. Further, we have five rural and five urban expenditure classes. The groupings include crucial sections like the poor and the abject poor households in separate categories.

The remaining part of this paper is divided into five sections. The literature review is given in Section 2. Section 3 provides the methods of deriving the I-O table for 2005-06 from 2006-07 table. Section 4 describes extension of the I-O for construction of SAM. Section 5 provides

some analytical aspects of this SAM. The concluding remarks are in Section 6.

2. Literature Review

Researchers have constructed a number of SAMs for India over the years. To our knowledge, Sarkar and Subbarao (1981) have constructed the earliest SAM for India; it consists of three sectors, namely agriculture, industry and services, and the government as an institution. Income is divided into agricultural wage income, non-agricultural wage income and non-agricultural non-wage income. Similarly, the SAM constructed by Sarkar and Panda (1986) has six production sectors and the private income of the economy is divided into three occupation classes. The SAM by Bhide and Pohit (1993) consists of six production sectors; they have separated livestock and forestry and industry as a single entity in their SAM. The nature of income classification in these SAMs does not help in the analysis of the size distribution of income.

The SAM constructed by Pradhan et al. (1999) for the Indian economy for 1994-05 was more complete in many aspects than the earlier ones. This SAM has 60 production sectors and two factors of production, namely labour and capital; households are classified into 12 occupational categories—six each for rural and urban areas—and two institutions, private corporate, and public non-departmental enterprises. The personal income distributed among different household categories is based on the MIMAP Survey. Pradhan et al. (2006) has provided a SAM for the Indian economy for 2002-03 consisting of 45 sectors and nine occupational categories of households.

The SAM for 2003-04 by Saluja and Yadav (2006) consists of 73 producing sectors and three institutions including household sectors, which are divided into five rural and five urban expenditure classes. This SAM provides separate sectors for crude oil, natural gas and various petroleum products. The SAM constructed by Kumar and Parikh (1996) focuses on assessment of the impact of climate change on Indian agriculture. The SAM by Ravindranath et al (2006) assesses the impact of climate change on forests in India. The SAM by Parikh et al (2009) analyzes the total CO₂ emissions of the Indian economy in 2003-04. The SAM by Ojha et al (2009) has decomposed the electricity sector into three separate sub-sectors, such as hydro, nuclear and non-hydro. The recent SAM for India for 2007-08 by Pradhan et al (2013) has focused on 78 sectors of the Indian economy. This SAM has attempted to disaggregate a few sectors which are more important for the analysis of inclusive growth.

A large number of multiplier based SAMs were constructed by many scholars for various countries. The early SAMs were constructed by Pyatt and Round (1979) for Sri Lanka economy, Defourny and Thorbecke (1984) for Korea, Powell and Round (2000) for Ghana, Hayden and Round (1982) for Botswana and Thorbecke, et al (1992) for Indonesia. All these studies have examined the nature of the multiplier effects of an exogenous change on the socio-economic groups of households.

3. Changing 2006-07 I-O Table to 2005-06 I-O Table

In this section, we discuss the methodology of changing the I-O table from 2006-07 to 2005-06. The Central Statistical Organization (CSO) has prepared a 130-sector Commodity x Industry flow matrix (absorption matrix) for 2006-07. First, we have obtained the Commodity x Commodity (CxC) I-O table for the year 2006-07 by making use of this absorption matrix and the make matrix for the year 2003-04. Then changed this CxC I-O table of 2006-07 to I-O table of 2005-06. The 130-sector I-O table is aggregated to form 41 sectors and translated into 2005-06. It may be mentioned here that the coefficient matrix is derived from the CxC I-O tables for the year 2006-07. The sources, the methodology used, the assumptions made and the problems encountered for estimating the sector-wise value added, value of output and various components of final demand are discussed below by broad sectors of the economy.

As described for the 1994-95 SAM (see Pradhan et al., 1999), the methodology remains similar in this SAM of changing I-O table from 2006-07 to 2005-06 for different sectors: agriculture (sectors 1 to 4), manufacturing industries (sectors 12 to 28), animal husbandry (sector 5), forestry and fishery (sectors 6 and 7) and mining (sectors 8 to 11). Similarly, there is no change in the methodology for converting different components of final demand, such as private final consumption expenditure (PFCE), government final consumption expenditure (GFCE), and gross fixed capital formation (GFCF). The concordance map between our 41 sectors and 130 sectors of the I-O table and NSSO commodity classification are shown in Table 1. The methodology used to extend the I-O table to the SAM is detailed in Section 4.

Table 1. Aggregated 41 Sectors Classification of 2005-06 I-O Transaction Table

Description of Sectors			130 I-O Sectors	NSSO Commodities
S1	Paddy	1		101-106
S2	Wheat	2		107-114
	Commercial			
S3	Corps	8,9,10,11,12,13,17		259, 329
				115, 139, 159,229,
S4	Other Crops	3,4,5,6,7,14,15,16,18,19,20		249, 289
	Animal			169, 189 excludes 181,
S5	Husbandry	21,22,23,24		343
	Forestry and			
S6	logging	25		341
S7	Fishing	26		181
S8	Coal and lignite	27		347, 350
	Crude			
S9	petroleum	29		
S10	Natural gas	28		352
S11	Other Mining	30,31,32,33,34,35,36,37		
	Food and			
S12	Beverage	38,39,40,41,42,43,44,45		179, 269, 279, 309,
S13	Textile and	46,47,48,49,50,51,52,53,54,59,60		379, 389, 399 excludes

	Leather		393
S14	Wood Products	55,56	551-553, 557
S15	Petroleum products	63	508, 510, 511
S16	Coal tar products	64	340
S17	Chemical and Rubber and Plastic Products	61,62,65,66,69,70,71,72,73	346, 351, 459,467, 468, 470, 493,613, 465
S18	Paper and Paper Products	57,58	400, 401, 403
S19	Fertilizer and pesticide	67,68	472
S20	Cement	75	
S21	Other Non-Metal and Mineral Products	76,74	463
S22	Iron and Steel	77,78,79	
S23	Non-Ferrous Basic Metals	80	579, 464, 444, 442, 580, 581, 597, 640
S24	Metal Products	81,82	
S25	Non-Electrical Machinery	83,84,85,86,87	596
S26	Electrical Mercenary	88,89,90,91,92,93,94	441, 460-462, 560-563, 609 excludes 596, 641
S27	Transport Equipment	95,96,97,98,99,100	610, 611, 612, 614
S28	Miscellaneous Manufacture	101,102,103,104,105	440, 564-568, 582, 583,629, 639,
S29	Construction	106	642, 643
S30A	Thermal	Part of 107	Part of 342
S30B	Nuclear	Part of 107	Part of 342
S30C	Hydro	Part of 107	Part of 342
S31	Water Supply	108	540
S32	Railway Transport Services	109	501
S33	Land Transport Including via Pipeline	110	502, 503, 512, 513
S34	Water Transport	111	504

S35	Air Transport	112	500
	Supporting and aux. Transport		
S36	Activities	113	505, 506
	Storage and		
S37	Warehousing	114	
S38	Other Service's	115,116,117,118,119,120,123,124,125,126,127,128,129	499
	Medical and		
S39	Health	122	419, 429
	Education and		402, 403, 404, 405,
S40	Research	121	406
S41	Pub Admin	130	

3.1 Division of Electricity Sector into Three Components (Thermal, Hydro and Nuclear)

National thermal, hydro and nuclear power corporations give yearly income and item-wise expenditure data for the power they produce. Here, the total input, total output, total value added and total net indirect tax are distributed according to the shares of total income of thermal, hydro and nuclear electricity. The detailed input structures available from these corporations are used for the entire generation of the respective kind of electricity. It is assumed that the input-output structure available from the NTPC and the NHPC for the entire generation of thermal electricity and hydroelectricity, respectively. The value of generation of nuclear power is taken as such. Similarly the sector wise value added is obtained. The total of value added and total values of output obtained in this way are different from the corresponding values given in the SAM for the entire electricity sector. The values obtained are adjusted pro rata with the control totals given in the SAM. Similarly, for the inputs available directly from the reports of power corporations, the adjustments are made pro rata to get the inputs given in the SAM. For thermal power, the fuel expenditures are given in terms of coal, gas, naphtha and oil. The corresponding estimates as given in the SAM are assumed under thermal power. For hydro, there is no expenditure shown under fuel. Only power charges are shown, which are taken as electricity consumption. Sector-wise allocation of inputs other than fuel was done on the basis of the proportions obtained for the entire electricity sectors. For nuclear power, uranium and heavy water are shown under fuel. Uranium has been put under other minerals and heavy water under chemicals. As these inputs are not shown in the SAM (because these are not being there in the CxC table 2006-07 of the CSO), the adjustment for heavy water is made against chemicals. The value of uranium, put under other minerals, has been subtracted from other services sector so as to keep the total expenditure same.

3.2 Energy Sectors

For this SAM, more emphasis is on the energy sectors; hence the following details are given. Energy sectors taken separately in the SAM are coal and lignite, natural gas, petroleum products and the three electricity sectors (thermal, hydro and nuclear electricity). Crude oil,

although taken as a separate sector, is not taken under energy because it is an input into petroleum products, which are taken under the energy sector. There are other materials that contribute to energy but are not separately taken. The names of the materials along with the reasons for not taking them as separate sectors are given below.

First, biomass fuel such as fuel wood forms part of the forestry sector and its inputs are not separately available. Crop residue is a by-product of sectors under agriculture; it is not feasible to have them as separate sectors. Similarly, animal dung is a by-product of the animal husbandry sector. Second, in addition to the forms of power generation mentioned above, power is generated by renewable energy sources like solar and wind. We have not considered these forms of energy because in 2008-09, the quantum of power generated by these sources was only 0.8 per cent of the total quantum generated. However, its contribution in terms of installed capacity could increase later.

3.3 Other Sectors (31 to 41)

The input and output structures for other sectors are based on the I-O table for 2006-07. The value of output and value added are given in the National Accounts Statistics (NAS) 2009. The technical coefficients for year 2006-07 and output for year 2005-06 has been used for preparing input –output structure for year 2005-06.

3.4 Final Demand

3.4.1 PFCE

The PFCE data at item level for 2005-06 and 2006-07 are obtained from NAS. These items are mapped according to our SAM sectors, and the growth rates between 2005-06 and 2006-07 are calculated from these data. These growth rates are applied to deflate 2006-07 PFCE to get detailed sector-wise estimates for 2005-06. For a few sectors (i.e. petroleum, railways, air transport, and health).we could not calculate the growth rates. In such cases, the change in the value of output is assumed for the change in PFCE.

3.4.2 GFCE

The total GFCE is available from NAS. The total government expenditure on goods and services obtained from the NAS is divided into different sectors by making use of 2006-07 structure. However, for education and health, the change in output between the two years is used for getting GFCE for 2005-06.

4. Extension of I-O for Construction of SAM

In the previous section, we have described the change from 2006-07 I-O data to 2005-06 data for our SAM. In this section, we discuss the methodology and the data sources for estimation of 2005-06 SAM. First, the total value added is decomposed into wage and non-wage income. Second, the PFCE and personal incomes are divided into households according to their occupation. Third, the PFCE is divided into 10 different expenditure classes in expenditure SAM. Fourth, the methods of construction of other relevant accounts of the SAM are also

discussed in this section. In both SAMs, we have followed the method for different sectors: agriculture, allied activities and mining (1 to 7 and 11), construction (sector 29), transport, storage and warehousing and other services (sectors 31 to 41), taxes (direct and indirect) and capital account are the same as described for the 1994-95 SAM (see Pradhan et al, 1999).

4.1 Manufacturing Industries (Sectors 12 to 28)

The output of manufacturing industries comprises the outputs of the organized and the unorganized manufacturing sectors. For the organized manufacturing sector, the GVA is divided into wages and non-wages income on the basis of the Annual Survey of Industries (ASI). Similarly, in case of unorganized manufacturing sectors, the ratio of wages and non-wages income is based on the Operational Characteristics of Unorganized Manufacturing Enterprises in India, Report No 524 (CSO, 2005).

4.2 Distribution of Sector-Wise Consumption Expenditure by Occupational Categories of Households

The sector-wise PFCE data is obtained from the I-O table for the year 2006-07. The NSSO 61st Round gives the expenditure for different occupational classes for five rural and four urban categories (Table 2). To estimate consumption expenditure as per our SAM sectors, we have prepared a concordance between 41 SAM sectors and the NSSO's items (Table 1). The ratios of expenditure of different categories of household to total expenditure for different sectors are used to distribute the total sector-wise PFCE into different occupational categories in our SAM. The total of indirect taxes on PFCE is divided into taxes paid by different household categories in proportion to the total expenditures of these categories on non-agricultural commodities. The sum of total expenditure on different sectors and indirect taxes paid by different category of households are equal to the total expenditure for each category.

Table 2. Household Categories Used in the Construction of SAM

Rural		Urban	
RH1	Non-agricultural Self Employed	UH1	Self Employed
RH2	Agricultural Labour	UH2	Salaried Class
RH3	Non-agricultural Labour	UH3	Casual labour
RH4	Agricultural Self Employed	UH4	Other households
RH5	Other households		

4.3 Distribution of Sector-Wise Consumption Expenditure by Expenditure Classes of Households

The NSSO 61st Round of consumer expenditure survey gives the consumption expenditure by 12 classes of rural and urban categories. We have clubbed these classes into five rural and five urban expenditure classes based on 2003-04 SAM by Saluja and Yadav (2006) (see Table 3). Using the expenditure data, the relative expenditure of each expenditure class is obtained. For a few sectors (such as oil seeds, trade, banking and insurance, business services, and real estate activities) the distribution of related groups or broad groups is used. The

sector-wise PFCE is divided into expenditure classes by applying the relative sector-wise expenditure of each class.

Table 3. Household Categories Based on Expenditure

Rural		Urban	
ERH1	000-255	EUH1	000-350
ERH2	255-340	EUH2	350-500
ERH3	340-525	EUH3	500-915
ERH4	525-775	EUH4	915-1500
ERH5	775- above	EUH5	1500- above

4.4 Distribution of Household Income by Source of Income and by Wage and Other Components

Data on the distribution of income and expenditure by occupation category are available from the income and expenditure survey conducted by NCAER for 2004-05. The ratio of income to expenditure as given by NCAER has been applied to category-wise expenditure as obtained by the NSSO 61st Round to calculate the income of respective households' categories. The income of each household category is adjusted pro rata to equate the total household income with total personal income, as obtained from NAS 2009. The household income from the rest of the world and the government (i.e. transfer payment), as obtained from NAS 2009, has been divided in the same proportion as in the 2003-04 SAM by Saluja and Yadav (2006) for different household categories based on source of income. After subtracting both of these components from the personal income of different household groups, the remainder has been divided in the same proportion as in the SAM for 2003-04 for labour (i.e. wage) and capital (i.e. rent). To balance the sum total of the columns of labour and capital with the respective row totals, the unbalanced amount has been proportionately divided among different households. It has caused an insignificant rise (i.e. 0.05 per cent) in the total personal income as obtained from NAS 2009.

5. Some Analytical Aspects

To look into some analytical aspects, the present SAM is aggregated into four sectors, namely primary (sectors 1-7 and 11), secondary (sectors 12-14 and sectors 16-29 and 31), tertiary sectors (sectors 32-41) and energy and electricity sectors (sectors 8-10, 15 and 30). The patterns of intermediate demand in the different sectors of various years are shown in Table 4. The share of intermediate demand in terms of total intermediate demand of the primary sector from the sector itself has declined from 47.3 percent in 1973-74 to 34.6 percent in 2005-06. Similarly, primary sector intermediate demand from the secondary, tertiary and energy sectors has declined over the years. The share of intermediate intra-sector demand in the secondary, tertiary and energy sectors rose between 1973-74 and 2005-06.

Table 4. Pattern of Intermediate Demand

Sectors	Year	Primary Sectors	Secondary Sectors	Tertiary Sectors	Energy Sectors	Total
Primary sectors	1973-74	47.3	44.6	8.1	0.0	100
	1983-84	48.4	43.9	7.7	0.0	100
	1993-94	41.2	48.7	9.7	0.4	100
	1994-95	38.7	53.8	7.4	0.1	100
	1998-99	30.3	59.3	10.1	0.2	100
	2003-04	41.6	48.3	9.9	0.1	100
	2005-06	34.6	52.8	12.5	0.2	100
Secondary sectors	1973-74	11.1	68.9	18.5	1.5	100
	1983-84	13.7	66.2	18.1	2.0	100
	1993-94	7.5	69.6	20.5	2.4	100
	1994-95	8.4	71.9	17.5	2.1	100
	1998-99	7.4	68.7	21.4	2.5	100
	2003-04	5.4	75.5	16.6	2.6	100
	2005-06	4.6	78.5	14.3	2.5	100
Tertiary sectors	1973-74	9.1	58.0	30.6	2.3	100
	1983-84	11.6	47.9	35.8	4.7	100
	1993-94	9.6	51.5	32.9	6.0	100
	1994-95	6.6	53.7	34.0	5.7	100
	1998-99	6.9	47.5	39.1	6.4	100
	2003-04	7.9	51.8	34.6	5.6	100
	2005-06	7.3	54.1	33.6	4.9	100
Energy sectors	1973-74	13.5	31.6	15.3	39.5	100
	1983-84	7.5	30.8	19.1	42.7	100
	1993-94	6.2	31.3	25.5	37.0	100
	1994-95	4.2	44.8	20.1	30.9	100
	1998-99	3.0	31.8	28.5	36.8	100
	2003-04	4.3	31.7	24.9	39.0	100
	2005-06	4.1	28.6	23.3	44.0	100

Sources: Figures pertaining to 1994-95 calculated from the SAM by (Pradhan et al, 1999) and 2005-06 are given in the present study and for other years taken from CSO I-O table.

Table 5 shows that the size of the total input as a proportion of total output over the period has increased from 37.5 percent in 1973-74 to 44.5 percent in 2005-06. The share of the primary sector itself has declined from 16.7 percent in 1973-74 to 13.7 percent in 2005-06. On the other hand, the share of the secondary sector, the tertiary and energy sectors have gone up.

Table 5. Pattern of Technological Change: Input as Percentage of Output

Sectors	Year	Primary Sectors	Secondary Sectors	Tertiary Sectors	Energy Sectors	Total
Primary sectors	1973-74	16.7	18.0	4.5	0.0	13.8
	1983-84	16.9	11.8	2.6	0.1	9.8
	1993-94	14.3	10.1	2.1	0.5	7.6
	1994-95	14.5	9.1	1.8	0.1	7.4
	1998-99	11.6	11.7	1.9	0.2	7.3
	2003-04	19.1	8.7	1.8	0.1	7.1
	2005-06	13.7	6.2	2.0	0.1	5.3
Secondary sectors	1973-74	4.0	28.2	10.5	9.0	14.0
	1983-84	8.4	31.3	10.6	5.8	17.3
	1993-94	5.8	32.1	9.8	6.5	16.9
	1994-95	7.0	27.0	9.6	5.0	16.4
	1998-99	6.5	31.1	9.5	6.5	16.7
	2003-04	6.4	35.4	8.0	6.3	18.4
	2005-06	6.7	33.2	8.5	5.8	19.3
Tertiary sectors	1973-74	1.8	12.9	9.4	7.6	7.6
	1983-84	4.7	14.8	13.7	8.9	11.3
	1993-94	6.0	19.1	12.7	13.2	13.6
	1994-95	4.2	15.6	14.5	10.7	12.7
	1998-99	5.0	18.0	14.4	14.2	13.9
	2003-04	7.3	18.7	12.9	10.4	14.1
	2005-06	6.8	14.9	12.9	7.4	12.6
Energy sectors	1973-74	0.8	2.1	1.4	39.5	2.3
	1983-84	1.6	5.0	3.9	42.9	6.0
	1993-94	1.8	5.5	4.7	39.1	6.5
	1994-95	1.4	6.7	4.4	29.8	6.5
	1998-99	1.0	5.7	4.9	38.2	6.6
	2003-04	2.5	7.1	5.8	44.8	8.8
	2005-06	2.3	4.6	5.2	38.5	7.3
Total Input	1973-74	23.2	61.2	25.7	56.2	37.5
	1983-84	31.5	62.9	30.8	57.6	44.3
	1993-94	28.0	66.8	29.3	59.3	44.6
	1994-95	27.0	58.5	30.3	45.6	43.0
	1998-99	24.1	66.5	30.8	59.1	44.4
	2003-04	35.2	70.0	28.6	61.6	48.3
	2005-06	29.5	59.0	28.7	51.8	44.5

Sources: Figures pertaining to 1994-95 calculated from the SAM by (Pradhan et al, 1999) and 2005-06 are given in the present study and for other years taken from CSO I-O table.

6. Concluding Remarks

In this paper, we have constructed a SAM for the Indian economy for the year 2005-06 by both occupational and expenditure categories of households. We have put emphasis on the energy sectors in India. The specific characteristics of our SAM are as follows. First, we have converted the I-O table from 2006-07 to 2005-06 for different sectors. Second, Our SAM has separated column wise the electricity sector into three sub categories such as thermal, hydro and nuclear electricity. Third, the expenditure distribution is based on the NSSO 61st Round survey on consumption expenditure for the year 2004-05. Finally, we have also used the income distribution data, available for the latest year, obtained from the household survey conducted by the NCAER for the year 2004-05.

Besides the subdivision of electricity sector, the other energy sector has also been divided into coal and lignite, crude oil and natural gas, and petroleum products, which will be useful for energy modeling. The expenditure wise division of households will help in modeling inclusive growth issues. This SAM can be significantly extended to include elements such as environmental quality, pollutants and natural resources and their interactions with economic activities.

Acknowledgement

This paper is part of the POEM project which was supported through the SEVENTH FRAMEWORK PROGRAMME for Research and Technological Development of European Union.

References

- Bhide, S., & Pohit, S. (1993). Forecasting and policy analysis through a CGE model for India. *Margin, NCAER, New Delhi*, 25,271-285
- Central Statistical Organization. (1989). *National Accounts Statistics: Sources and Methods*. Government of India. Retrieved from http://mospi.nic.in/Mospi_New/site/home.aspx
- Central Statistical Organization. (1994). *National Accounts Statistics: Factor Incomes, 1980-81-1989-90*. Retrieved from Government of India. Retrieved from http://mospi.nic.in/Mospi_New/site/home.aspx
- Central Statistical Organization. (2005). Operational Characteristics of Unorganized Manufacturing Enterprises in India, Report No-524. Government of India. Retrieved from http://mospi.nic.in/Mospi_New/site/inner.aspx?status=3&menu_id=84
- Central Statistical Organization. (2009). *Input Output Transactions table (2006-07)*. Government of India. Retrieved from http://mospi.nic.in/Mospi_New/site/inner.aspx?status=3&menu_id=84
- Central Statistical Organization. (2009). *National Accounts Statistics*. Government of India.

Retrieved from http://mospi.nic.in/Mospi_New/site/inner.aspx?status=3&menu_id=84

De, Janvry A., & Subbarao, K. (1986). *Agricultural Price Policy and Income Distribution in India*. Oxford University Press, New Delhi.

Defourny, J., & Thorbecke, E. (1984). Structural Path Analysis and Multiplier Decomposition within a Social Accounting Matrix. *Economic Journal*, 94, 111-136. <http://dx.doi.org/10.2307/2232220>

Handbook of Statistics on Indian Economy (2006-07). Reserve Bank of India (RBI). Retrieved from <http://www.rbi.org.in/scripts/AnnualPublications.aspx?head=Handbook%20of%20Statistics%20on%20Indian%20Economy>

Hayden, C., & Round, J.I. (1982). Developments in Social Accounting Methods as Applied to the Analysis of Income Distribution and Employment Issues. *World Development*, 10, 451-65. [http://dx.doi.org/10.1016/0305-750X\(82\)90002-X](http://dx.doi.org/10.1016/0305-750X(82)90002-X)

Kumar, K. S., & Parikh, J. (1996). *Potential Impacts of Global Climate Change on Indian Agriculture*. Communicated to Global Environment Change, 1996

National Sample Survey Organization. (2004-05) *Household Consumption Expenditure among socio economic groups*. Government of India. Retrieved from http://mospi.nic.in/Mospi_New/site/inner.aspx?status=4&menu_id=63

Ojha, V.P., Pal, B.D., Pohit, S., & Roy, J. (2009). Social Accounting Matrix for India. Retrieved from <http://ssrn.com/abstract=1457628>

Pal, B. D., Pohit, S., & Roy, J. (2012). A social accounting matrix for India. *Economic Systems Research*, 24, 77-99. <http://dx.doi.org/10.1080/09535314.2011.618824>

Parikh, J., Panda, M., Ganesh-Kumar, A., & Singh, V. (2009). CO₂ emissions structure of Indian economy. *Energy*, 30, 1-7

Pohit, S. (1997). *The Impact of Climate Change on Indians Agriculture: Some preliminary Observations*. Proceeding of the 20th International Conference of the International Association for Energy Economics, 22-24th January, Delhi, India

Powell M., & Round, J. I. (2000). Structure and Linkage in the Economy of Ghana: A SAM Approach. In E Aryeetey, J Harrigan and M Nissanke (eds), *Economic Reforms in Ghana: Miracle or Mirage*, James Currey Press, Oxford: 68-87.

Pradhan, B. K., Sahoo, A., & Saluja, M.R. (1999). A social accounting matrix for India. 1994- 95. *Economic and Political Weekly*, 34(48), 3378-3394.

Pradhan, B.K., & Roy, P.K. (2003). *The Well Being of Indian Households: MIMAP – India Survey Report*. Tata McGraw Hill, New Delhi.

Pradhan, B.K., Saluja, M. R., & Sharma, A.K. (2013). A Social Accounting Matrix for India 2006-07, IEG Working Paper No. 326. Retrieved from

<http://www.iegindia.org/workpap/wp326.pdf>

- Pradhan, B.K., Saluja, M.R., & Singh, S.K. (2006). *Social Accounting Matrix for India, Concepts, construction and Applications*. Sage Publications, New Delhi.
- Pyatt, G., & Round .J.I. (1979). Accounting and Fixed Price Multipliers in a SAM Framework. *Economic Journal*, 89, 850-873. <http://dx.doi.org/10.2307/2231503>
- Ravindranath, N H., Joshi, N V., Sukumar, R., & Saxena, A. (2006). Impact of Climate change on Forests in India. *Current Science*, 90, 354-361.
- Saluja, M R., & Yadav, B. (2006). *The Social Accounting Matrix of India*. Planning Commission, Government of India. Retrieved from http://planningcommission.nic.in/reports/sereport/ser/sr_sam.pdf
- Sarkar, H., & Subbarao, S.V. (1981). A short term Macro-forecasting Model for India: Structure and Use. *Indian Economic Review*, 16, 55-80.
- Sarkar, H.K., & Panda, M. (1986). Quantity-Price Money Interaction in a CGE Model. *Margin*, NCAER, New Delhi, 18, 31-47
- Thorbecke, E., Downey. R., Keuning. S., Roland-Holst. D., & Berrian. D. (1992). *Adjustment and Equity in Indonesia*, OECD Development Centre, Paris.

APPENDIX TABLE 1: SAM 2005-06 for India by Occupation Classes

Production sectors	S1	S2	S3	S4	S5	S6	S7	S8	S9	S10
S1	3395595	47276	297	276103	45231	44	482	0	0	0
S2	59551	2232453	4	350610	13536	1	6	0	0	0
S3	4326	7804	699813	45696	583	0	0	0	0	2
S4	52019	109361	10	1681595	2552907	146	7	0	0	1
S5	611480	76125	583765	1042640	29452	8	87	0	0	1
S6	508	9	1	60	161	7980	0	0	0	10
S7	288	1004	0	2221	0	0	231483	0	0	0
S8	45	24	9	61	1254	2	0	11203	11	910
S9	0	0	0	0	151	0	0	0	50252	1264
S10	0	0	0	0	878	0	0	0	0	5
S11	2	6	1	12	513	0	0	0	68	244
S12	41873	5269	19	17311	271747	1	10783	0	0	3
S13	20023	17652	1812	14275	2764	3119	131918	87	1	13
S14	338	400	152	738	443	186	6482	29683	3	1957
S15	415094	163027	172304	402610	1426	28077	150008	41651	88916	10516
S16	0	0	0	0	226	0	0	0	0	8
S17	837	882	330	2724	16685	6849	9380	299060	62730	26189
S18	2645	2217	1264	3501	960	2724	0	6408	4	439
S19	1461607	1115832	763611	1504785	166	349	206	0	0	3
S20	0	0	0	0	74	7	0	0	787	58
S21	1	1	0	118	366	13	0	0	50303	4516
S22	0	0	0	1	345	9	6447	2	1142	92
S23	1	1	0	2	409	149	340	0	0	20
S24	297	225	143	330	519	1445	6612	48354	94139	8489
S25	59370	61196	10421	75794	6238	3278	8	205184	177505	23468
S26	264	177	133	241	959	1741	0	319	118	37
S27	9737	4344	2673	6657	25	13680	92810	38874	440	2569
S28	11027	6050	2565	6844	1396	9267	2	21082	31	1931
S29	281970	153708	79541	229058	5454	26225	40	29991	275241	16618
S30A	294553	249049	43249	148069	1556	519	42	107822	27131	14435
S30B	9433	7976	1385	4742	50	17	1	3453	869	462
S30C	42536	35965	6245	21382	225	75	6	15570	3918	2084
S31	56	41	33	61	6	222	0	1834	0	121
S32	195064	41701	25221	68442	25695	5884	2428	8213	3224	1646
S33	414886	238035	162280	377783	423538	83029	54370	139830	47660	15600
S34	29654	16538	6240	13931	1974	364	2024	668	995	140
S35	908	1162	273	2772	29290	199	50	833	470	100
S36	35874	20654	13519	32560	50678	354	4377	4431	3101	533
S37	95	63	49	85	0	0	0	0	0	0
S38	799609	432483	277907	830622	2009642	76611	53105	177169	176522	25579
S39	0	0	0	0	0	0	0	0	0	0

S40	0	0	0	0	0	0	0	0	0	0
S41	0	0	0	0	0	0	0	0	0	0
Labour	3853026	2420477	4430677	13939693	8733807	1360788	1945576	1036488	911385	244392
Capital	3061476	1923225	3520432	11075983	6939571	1188004	1257382	2256623	1983927	532000
RH1										
RH2										
RH3										
RH4										
RH5										
UH1										
UH2										
UH3										
UH4										
Private corporations										
Public Enterprises										
Government										
Indirect taxes	-1073623	-1082192	-504687	-1034144	28278	10799	-190533	89364	74865	12136
Capital a/c										
Rest of the world	45	18267	207251	631149	24437	472651	13649	877525	11794187	596819
Total	14092490	8328486	10508940	31777115	21223617	3304812	3789578	5451719	15829947	1545409

Production sectors	S11	S12	S13	S14	S15	S16	S17	S18	S19	S20
S1	2	397158	78	7	0	0	5356	1735	216	0
S2	0	758226	147	17	0	0	8291	228	481	0
S3	28	3734234	1888611	1571	12	51	525344	1404	7210	1
S4	36	2870182	88475	918	1642	38	592313	19500	5548	98
S5	39	1333478	313531	5926	689	2	124360	781	2528	37
S6	9	71397	1058	282747	55	575	36044	212104	321	35
S7	0	380829	80	1	0	0	4382	209	223	0
S8	19911	22812	23499	5953	1975	178237	147295	50100	33104	197557
S9	61	160	10	38	15111689	308069	122573	497	0	1
S10	1151	9658	32952	95	1892	110	274662	863	376190	32710
S11	25262	4476	3215	445	778	2467	159991	3564	160392	337466
S12	297	3544965	11037	3187	1295	125	339963	10057	12052	185
S13	2927	87499	5179982	10197	2749	647	303087	18160	9282	8540
S14	2238	141356	72185	25625	7089	911	218177	81743	25120	26351
S15	52580	330287	386239	10080	785441	29392	985247	85112	775522	114895
S16	2193	599	452	77	381	24513	35382	372	689	2828
S17	95467	942949	2059191	93578	361549	73259	13294896	442327	1208765	124347
S18	1787	367907	141662	22782	10318	1181	280970	1324928	5215	34467
S19	224	50138	445	6582	2950	106	208392	68	545537	0
S20	701	64	426	46	2506	447	6237	28	76	1290
S21	5871	5903	5250	1376	1015	1618	39686	6717	1624	150700

S22	4767	980	12081	36871	950	967	203971	13710	3921	95
S23	37329	4946	6010	6447	1355	6481	201290	6672	5924	159
S24	36243	18152	34573	20309	933	412	112063	12366	1840	124
S25	21845	216935	508839	13891	25652	5407	262708	13636	16252	4601
S26	2099	10048	23783	20781	752	11	128726	24149	4497	141
S27	1954	5391	3526	4730	107	4	32722	243	227	0
S28	3685	14291	129733	6511	9447	375	205496	25899	5079	3330
S29	49392	281910	388975	5511	148763	11559	220230	55572	48813	8391
S30A	52533	189745	595854	17404	236809	14294	675554	117320	82787	233478
S30B	1682	6077	19083	557	7584	458	21635	3757	2651	7477
S30C	7586	27401	86046	2513	34197	2064	97555	16942	11955	33716
S31	315	5484	3283	91	160	17	10353	30	1847	5
S32	11166	70221	24388	5052	373235	63184	136796	23662	36927	127276
S33	36040	1263098	1810276	55895	64062	29580	1202886	296838	231904	111604
S34	1063	77357	6241	3837	7916	3979	27277	5021	11886	11806
S35	162	14370	30401	465	2850	137	34273	14066	898	539
S36	2240	121726	206775	5958	5150	3855	133057	32469	23953	12266
S37	0	3	0	0	0	0	0	0	0	0
S38	209624	4799879	4334160	194999	654593	139756	3493184	468445	574987	347450
S39	0	0	0	0	0	0	0	0	0	0
S40	0	0	0	0	0	0	0	0	0	0
S41	0	0	0	0	0	0	0	0	0	0
Labour	738304	1447910	2708839	232558	153585	29051	2026546	461505	320783	187956
Capital	1607143	3431354	3708466	460910	3741863	123717	6902975	882199	891771	608497
RH1										
RH2										
RH3										
RH4										
RH5										
UH1										
UH2										
UH3										
UH4										
Private corporations										
Public Enterprises										
Government										
Indirect taxes	49108	621566	448180	46057	1238672	41740	2292966	368724	288662	100638
Capital a/c										
Rest of the world	7178289	2909337	1230443	87772	1789001	1846363	7029198	869715	368852	902410
Total	10263352	30592456	26528480	1700365	24791664	2945157	43164112	5973436	6106510	3733468

Production sectors	S21	S22	S23	S24	S25	S26	S27	S28	S29	S30A
S1	11	2	1	67	425	26	0	925	92	222
S2	20	0	2	55	829	49	0	1785	56	227
S3	1022	575	98	821	431	1367	51	1957	1203	35533
S4	2665	696	302	3047	4927	3863	4987	12202	933142	2853
S5	882	110	632	1886	4380	7671	5206	23112	526670	447
S6	5974	565	90	185	2259	2121	564	6986	319098	2207
S7	10	0	1	28	452	66	0	972	30	120
S8	92566	1623792	359952	343592	28555	38463	23607	17034	2071	1580780
S9	1639	16401	841	2248	156	2545	161	79232	23	38563
S10	8324	251614	20859	42821	22519	4481	1268	2283	347	303851
S11	574257	501114	371448	237954	25699	102119	19622	345725	3264837	6101
S12	3600	1875	1527	14212	2540	3065	699	5632	303	1982
S13	26204	7950	4592	13469	40664	117436	69907	42931	81290	3942
S14	35056	15884	4158	27394	95851	120259	34501	41576	809620	4671
S15	480285	370940	75289	126523	145387	252621	112206	49891	987593	1067705
S16	26132	193857	36154	36240	1873	9235	2180	1694	1949867	46049
S17	303410	217240	193723	271463	439118	1763669	658887	426157	954176	33318
S18	57068	17582	7951	32353	53785	158815	26271	45639	76917	50679
S19	2872	4551	159	2133	80	5010	75	319	9968	2966
S20	73408	1412	949	2138	1178	2126	3639	963	3474730	107
S21	564300	45210	5417	25024	43928	253509	22211	25079	4903573	890
S22	56381	2736611	139188	1406380	2659056	2882922	1345579	287238	8993130	13012
S23	12800	2525182	788242	1309992	1252977	2484300	193320	194240	2702	15138
S24	41971	626652	121612	408242	857268	1481972	666325	161562	1785782	8655
S25	34241	114437	42499	220526	1586279	1038404	764260	164565	268165	152949
S26	3666	93217	36714	174384	805949	7142858	605512	333339	1803648	481459
S27	746	58693	27059	16121	64943	21236	1378208	8968	25436	15473
S28	39822	20171	27104	78403	182924	347298	211371	3013734	622210	255208
S29	471277	70593	54076	140922	383683	491461	129894	82344	3318361	282898
S30A	285469	891711	152731	212186	173572	316021	270099	57635	808970	3426661
S30B	9143	28558	4891	6796	5559	10121	8650	1846	25908	109743
S30C	41224	128770	22056	30641	25065	45636	39004	8323	116822	494837
S31	883	139	67	273	481	265	18150	26	155168	17098
S32	56799	716748	120577	157248	68487	80140	57547	161019	799164	410299
S33	287430	448948	118291	197223	303137	676180	292461	325709	3346796	300786
S34	11644	38309	8744	9260	3005	4988	2604	11754	75110	39754
S35	1162	2398	566	2160	7614	18453	12095	10821	21047	4140
S36	23623	51973	13068	21094	27098	57573	25734	24395	318670	32775
S37	0	0	0	0	0	0	0	0	0	0
S38	608032	2393622	490841	897146	1982122	4366167	2214498	1289779	8411293	1702920
S39	0	0	0	0	0	0	0	0	0	0
S40	0	0	0	0	0	0	0	0	0	0

S41	0	0	0	0	0	0	0	0	0	0
Labour	545873	964051	146609	830112	1252024	1064460	716006	1114099	22976095	3124210
Capital	1673649	3799129	753492	1573192	2519121	2359731	2124910	2026289	5004535	488085
RH1										
RH2										
RH3										
RH4										
RH5										
UH1										
UH2										
UH3										
UH4										
Private corporations										
Public Enterprises										
Government										
Indirect taxes	339731	749627	278044	554287	1088397	2324264	936927	438881	2160526	-1313645
Capital a/c										
Rest of the world	433097	2540237	5030344	487238	3846268	5225335	2978970	18435972	0	0
Total	7238366	22271146	9460960	9917479	20010065	35288304	15978167	29284631	79335145	13245670

Production sectors	S30B	S30C	S31	S32	S33	S34	S35	S36	S37	S38
S1	3	41	3	0	15	104	0	0	0	615887
S2	3	42	0	0	1107	109	0	8	0	337049
S3	542	7732	728	0	0	0	2	0	0	130385
S4	42	523	115	0	820333	671	0	0	0	2030452
S5	7	82	3	0	0	0	0	0	0	1105391
S6	35	411	148	33	0	0	0	0	0	15594
S7	2	22	0	0	0	0	0	0	0	13783
S8	0	0	277	3617	0	0	0	0	0	16572
S9	0	0	159	0	0	0	3	6	0	11724
S10	0	0	139	0	0	0	0	0	0	5866
S11	74264	1118	19	0	0	0	0	0	0	12804
S12	35	562	645	0	16172	786	0	0	31	2133875
S13	76	1882	111	788	68121	881	39	248	1709	123466
S14	71	925	227	181	1017	84	87	457	3884	90257
S15	44094	386183	1902	232067	10419504	40833	76052	37878	2952	781855
S16	0	0	30	167	0	0	0	0	0	1458
S17	38323	6462	4314	436	1721120	162939	99809	38330	3126	380061
S18	760	10252	2551	9494	270049	1007	1374	117999	4092	828543
S19	44	544	1091	5	197	0	0	0	3029	9586
S20	2	20	0	0	0	0	0	0	119	492
S21	13	163	38	516	53385	0	0	0	134	28035

S22	192	2385	1907	332	713	0	0	78	591	173353
S23	223	2775	65	0	279	0	0	0	0	77637
S24	128	1586	1072	770	236145	774	38	24	619	137354
S25	2078	50225	2367	6464	377515	446	0	43	5574	137783
S26	6597	97385	1359	29262	409953	11263	4122	13649	92	1791461
S27	228	2836	653	708718	959416	89486	582	10544	509	302820
S28	3851	59050	2407	372259	556274	6340	70625	3	4897	1593324
S29	3856	67628	101492	704107	514792	32193	26481	92408	16990	2758160
S30A	50635	643853	20178	551921	22110	4422	1711	78497	55813	514140
S30B	1622	20620	646	17676	708	142	55	2514	1787	16466
S30C	7312	92977	2914	79702	3193	639	247	11336	8060	74246
S31	258	3244	123057	278	13267	17208	769	5	276	93821
S32	6065	76533	606	491870	440373	1134	1083	1067	2354	92183
S33	4439	55252	5653	66428	1655039	60017	38948	379933	7752	2989007
S34	608	7841	42	2967	117275	472	898	421	50	48202
S35	61	759	154	1245	29671	160	247	5602	69	86346
S36	502	7196	163	1611	77455	964	796	3382	177	101601
S37	0	0	0	0	0	166	0	10462	0	355925
S38	25186	325271	77908	177123	6544281	154312	81497	543649	23032	15799007
S39	0	0	0	87448	0	0	0	0	0	149787
S40	0	0	0	10667	0	0	0	0	0	127894
S41	0	0	0	0	0	0	0	0	0	0
Labour	235474	1358759	311655	2187696	8652313	559454	211606	951888	124077	36480438
Capital	36787	212274	288385	1226643	5131548	331803	125500	564549	103345	78237921
RH1										
RH2										
RH3										
RH4										
RH5										
UH1										
UH2										
UH3										
UH4										
Private corporations										
Public Enterprises										
Government										
Indirect taxes	-49121	-316283	7202	191468	2215127	41097	37399	43215	9072	650393
Capital a/c										
Rest of the world	0	0	0	0	437572	0	0	0	0	3586539
Total	495297	3189129	962382	7163959	41766038	1519903	779973	2908195	384215	155048943
Production sectors	S39	S40	S41	Labour	Capital	RH1	RH2	RH3	RH4	RH5

S1	3037	4841	0	1123360	1610415	633976	2396776	591648
S2	3809	5045	0	478793	452615	253385	1172888	266729
S3	0	0	0	255151	354786	171446	638970	129911
S4	11466	8104	0	2003626	2687671	1191862	4877036	1239782
S5	8692	4301	0	1514093	1222125	727015	4572394	1061071
S6	0	0	0	283535	473857	212274	749181	143286
S7	0	0	0	363110	322834	218737	601750	214524
S8	0	0	0	3847	584	1486	2956	3288
S9	0	0	0					
S10	0	0	0	5562	8650	333	67064	7000
S11	0	0	0					
S12	0	0	0	2453320	2823340	1528826	5420320	1791610
S13	14647	8229	0	1346644	1042226	611399	3209403	944364
S14	24905	5164	0	36447	11816	18499	39760	25195
S15	59483	28590	0	385755	28823	66982	766122	445111
S16	0	0	0	0	0	0	0	0
S17	1963639	11163	0	471402	568755	276625	1055485	337010
S18	59007	11249	0	77289	49844	34072	189402	93843
S19	0	0	0	0	0	0	0	0
S20	0	0	0					
S21	3	1	0	6213	6653	4690	19558	3827
S22	0	0	0					
S23	0	0	0					
S24	6349	4838	0	69333	97933	24975	152505	35619
S25	6218	3077	0	49301	40469	39657	80097	86473
S26	81829	1277	0	377966	294142	190839	1036935	265206
S27	10130	5011	0	158818	51532	34651	364902	134753
S28	71064	40272	0	115708	49855	48691	250892	144727
S29	186938	244091	0	212915	186905	109173	374908	205457
S30A	13138	6741	0	181948	139557	83177	355079	159680
S30B	421	216	0	5827	4469	2664	11372	5114
S30C	1897	973	0	26275	20153	12011	51276	23059
S31	757	374	0	3196	2855	1729	6258	3604
S32	1399	1242	0	61278	29651	36205	76503	77251
S33	171273	329950	0	1828845	2117838	1486215	4084783	1694763
S34	785	424	0	142879	143121	63793	260917	26363
S35	32977	745	0	2711	30	24	689	300
S36	24201	858	0	84231	50671	22686	123632	59927
S37	0	0	0					
S38	639836	567040	0	5610710	4856465	2669674	16249879	4747276
S39	0	0	0	1023338	930998	554617	2227519	679964
S40	646	332	0	656733	353758	245075	1511868	747150
S41	0	0	0	0	0	0	0	0

Labour	4364248	8806610	17783932								
Capital	1845084	2466571	1958803								
RH1				11419479	10280381						
RH2				22010990	78204.625						
RH3				11134926	736219.92						
RH4				22595410	42119978						
RH5				5065984.7	15818558						
UH1				28695819	13106221						
UH2				54381581	3777301.5						
UH3				4755761.7	1001138.1						
UH4				1621386.3	4917261.3						
Private corporations					25195200						
Public Enterprises					7596700						
Government					5942600	1582678			2948833	925485	
Indirect taxes	348257	23270	0			932089	842055	494465	2299584	771647	
Capital a/c						38031200	1386415	3291077	440628	15672495	6883948
Rest of the world	0	0	0								
Total	9956135	12590599	19742735	161681337	168600963	25321341	25168529	12512557	73919990	24975967	

Production sectors	UH1	UH2	UH3	UH4	Private corporations	Public Enterprises	Government	Indirect taxes	Capital a/c	Rest of the world
S1	829730	854788	233908	130178			93747		276722	521958
S2	561809	506140	104762	71799			48512		553775	83536
S3	296442	311991	71770	39712			0		1083862	55764
S4	2261959	2350941	473958	366020			170027		1686932	652115
S5	2183101	2127736	288469	323629			311143		836714	241728
S6	106821	54888	62879	10616			56		26065	212012
S7	276036	320186	77154	68935			0		110825	579281
S8	6613	5590	2632	820			5787		568780	24499
S9							0		933	80547
S10	2653	2574	286	195			25046		-15531	46038
S11							0		-626172	4653542
S12	3196549	3712496	677743	761710			364090		-384599	1789337
S13	1694541	1810135	245736	291436			300504		895577	7693204
S14	23956	43625	1979	3343			54714		-616664	100290
S15	1503629	1485112	26760	219219			385466		-3015208	1685635
S16	0	0	0	0			0		523879	48619
S17	646583	724322	119160	120533			468162		4679790	4883405
S18	168358	220159	11639	56664			436629		384365	196355
S19	0	0	0	0			195		205665	197021
S20							0		149311	10126
S21	4369	4128	1007	667			375		542367	398006

S22							0	-643953	1929699	
S23							0	-291026	614581	
S24	85995	82783	9133	15368			51894	1456031	888602	
S25	139166	341433	15452	52541			129656	10697880	1647598	
S26	407012	423901	59907	88229			401407	14696004	2898781	
S27	277778	426502	16121	100405			242350	8018931	2222894	
S28	274144	343168	20088	55546			144121	6530379	13264660	
S29	206087	548904	24135	35262			675387	64264403	0	
S30A	565519	583911	55446	106615			499679	-1145358	0	
S30B	18111	18700	1776	3414			16003	34406	0	
S30C	81665	84321	8007	15396			72158	1110952	0	
S31	23195	25743	2215	4983			418784	0	0	
S32	196573	351479	28082	54984			134117	315599	808877	
S33	1943745	3230973	553469	499838			745828	1205256	3254641	
S34	8725	108151	13456	3001			17752	26487	91187	
S35	101314	3261	0	9321			40593	153457	95565	
S36	211277	237380	15417	45827			33507	193550	301647	
S37							4143	0	13224	
S38	9108828	10286639	819342	1591808			12240500	4062539	13414405	
S39	1074189	1098527	219079	317078			1593592	0	0	
S40	1699120	2145831	104269	429897			4557360	0	0	
S41	0	0	0	0			19742735	0	0	
Labour									-263700	
Capital									-2347900	
RH1							3265449		356033	
RH2							2596766		482568	
RH3							618133		23277	
RH4							8913575		291028	
RH5							2796307		1295117	
UH1							4397735		3330775	
UH2							6615605		2531592	
UH3							401021		119668	
UH4							1065079		2426690	
Private corporations							1406600			
Public Enterprises										
Government	1830769	2178772		277464	10134300			28890492	-712349	
Indirect taxes	1432754	1716044	184761	295640			452666	6884075		
Capital a/c	16081434	28534846	1727595	3562324	16467500	7596700	-22955913		-63995523	
Rest of the world								-72712274		
Total	49530549	67306079	6277589	10030417	26601800	7596700	53999043	28890492	52724726	9136656
	Production sectors	Total								
	S1	14092490								

S2	8328486
S3	10508939
S4	31777115
S5	21223617
S6	3304812
S7	3789577
S8	5451719
S9	15829946
S10	1545409
S11	10263352
S12	30592456
S13	26528480
S14	1700365
S15	24791664
S16	2945157
S17	43164112
S18	5973436
S19	6106510
S20	3733468
S21	7238365
S22	22271146
S23	9460960
S24	9917479
S25	20010065
S26	35288303
S27	15978168
S28	29284631
S29	79335144
S30A	13245670
S30B	495297
S30C	3189129
S31	962383
S32	7163958
S33	41766038
S34	1519903
S35	779972
S36	2908195
S37	384215
S38	155048947
S39	9956135
S40	12590599
S41	19742735
Labour	161681337

Capital	168600963
RH1	25321341
RH2	25168529
RH3	12512557
RH4	73919990
RH5	24975967
UH1	49530549
UH2	67306079
UH3	6277589
UH4	10030417
Private	
corporations	26601800
Public enterprises	7596700
Government	53999043
Indirect taxes	28890492
Capital a/c	52724726
Rest of the world	9136656
Total	

APPENDIX TABLE 2: Expenditure Classes for 2005-06

Production sectors	ERH1	ERH2	ERH3	ERH4	ERH5	EUH1	EUH2	EUH3	EUH4	EUH5
S1	489929	1154499	2496438	1435091	780218	143145	356508	813928	478894	256129
S2	162735	450517	1031188	609454	370516	98843	215302	491433	276783	162148
S3	64932	203162	580095	409323	292752	33403	90892	240983	188240	166396
S4	664593	1805514	4528790	2915285	2041874	280521	745284	2023408	1446823	1000764
S5	210314	847376	3143458	2735726	2227236	146469	513882	1710440	1409468	1075264
S6	128173	325725	768341	436401	203493	45588	78524	89783	16216	5093
S7	62524	187977	598987	488840	382628	27186	84848	245036	202221	183020
S8	307	1325	4468	3479	2582	1858	4257	6587	2149	804
S9										
S10	0	5716	15786	31632	35475	190	1006	1461	2499	552
S11										
S12	581970	1754237	4981812	3640339	3059059	312849	913221	2800139	2269624	2052666
S13	88864	400976	1805195	2086572	2772430	46161	250329	1040185	1189937	1515236
S14	135	209	9114	17658	104601	125	1138	7474	11452	52713
S15	1578	14921	200397	447042	1028855	2439	35292	589402	1035829	1571758
S16										
S17	130249	366838	988590	707025	516577	66118	191135	572765	441667	338912
S18	5118	23905	101137	131931	182359	3743	14802	101850	135820	200605
S19										
S20										
S21	1889	5532	14924	10862	7732	620	1554	4268	1995	1734
S22										
S23										
S24	4108	22152	103991	98286	151828	3341	14111	65650	58527	51651
S25	191	1829	27554	65429	200994	1803	5461	60454	105101	375772
S26	56254	207977	700755	615112	584990	24367	91199	311700	276356	275426
S27	4804	18340	72148	79756	569607	2852	11021	46948	67508	692478

S28	415	7022	76148	119650	414118	1576	6139	93937	205417	378398
S29	58735	147337	432370	309641	351936	16456	44075	151205	184274	207719
S30	24965	91631	340005	316137	308924	35009	129553	470851	448337	459132
S31	356	1193	5200	5151	5742	1123	4705	19560	17313	13434
S32	2070	15462	49564	73480	140312	5507	24838	155027	167371	278376
S33	272802	937640	3485758	3165336	3350909	142882	560872	2186354	1909693	1428225
S34	18378	65514	228938	181255	142987	1203	3672	22996	6820	98642
S35	0	30	182	243	3299	0	5	199	368	113323
S36	7533	25329	113085	111703	83496	7075	36267	143435	158594	164530
S37										
S38	781004	2449039	7057621	6484107	8803605	392565	1257654	6291256	8776348	13647421
S39	84551	319867	1143084	1263222	2605712	46329	188892	674905	673325	1125421
S40	55458	223985	835388	954268	1445485	49953	204113	1133317	1269870	1721865
S41										
Labour										
Capital										
ERH1										
ERH2										
ERH3										
ERH4										
ERH5										
EUH1										
EUH2										
EUH3										
EUH4										
EUH5										
Private										
corporations										
Public										
Enterprises										
Government	36482	67422	3150664	501410	183574	0	0	2860696	2028029	915723
Indirect	178926	545263	1621897	1351539	1496981	87606				
taxes							274399	1018390	1057557	1336482
Capital a/c	-440690	434894	2053573	7974004	28962560	63719	1805676	6426273	11238652	19062100
Rest of the										
world										
Total	3739651	13130353	42766647	39776390	63815445	2092624	8160625	32872295	37759078	50929910

Note: Remove the columns RH1 to UH4 in Appendix Table 1. Add the three rows S30A to S30C to make it one row in Appendix Table 1. Then put Appendix Table 2 at the same place to obtain expenditure wise SAM.

Copyright Disclaimer

Copyright reserved by the author(s).

This article is an open-access article distributed under the terms and conditions of the Creative Commons Attribution license (<http://creativecommons.org/licenses/by/3.0/>).