

A Labour-Oriented SAM for India: Focus on Green Sector

Topic: The Importance of Resources

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Objective: In this paper we develop a labour-oriented Social Accounting Matrix (LO-SAM) for India with 16 basic sectors plus four new sectors. The latest national IO table for India for 2007-08 has been published by the Central Statistics Office (CSO), Government of India. This table has been updated by the NCAER to 2009-10 maintaining consistency of the published estimates of sectoral gross value added, GDP and estimates of final expenditures of consumption, capital formation and net exports published by CSO in its National Accounts Statistics (NAS) publication. The updated IO table for 2009-10 has been used for developing a LO-SAM the analysis presented in this paper. The focus is on sectoral job creation which is estimated through the multiplier analysis.

Sectors in Focus: The focussed sectors selected for analysis in this study are the following:

1. Forestry
2. Watershed Development
3. Wind Energy
4. Wind Turbine Generators (WTG) Manufacturing
5. Metro Transport Services

The 20 sectors of the SAM are: Agriculture and Allied Activities (except Forestry), Forestry and Logging, Mining, Petroleum Products, Bricks and Tiles (Structural Clay Products), Cement, Non-Metallic Mineral Products, Iron and Steel (Ferro Alloys and Casting & Forging), Rail and Other Transport, Equipment, Wind Turbine Manufacturing, Other Manufacturing, Watershed Development, Other Construction, Wind Energy, Other Electricity, Metro Transport Services, Railway Transport Service (Except Metro), Other Transport Services, Other Services, and Public Administration and Defence.

The LO-SAM: This would have 20 industry sectors, four types of labour (Formal-Male/Female, Informal Male/Female) and four types of households (main source of income as Employers, Own Account Workers, Wage-Earners, Others). The LO- social accounting matrix (SAM) is to be built within this framework, with each control total of the national accounts matrix being expanded into a sub-matrix whose rows and columns use more detailed breakdowns of transactors and transactions. The expansion provides a coherent set of sub-matrices. The SAM expansions focus on the role of people in the economy. For example, the household sector may be broken down into categories of households to show a detailed presentation of the labour types that is formal and informal again by gender. The labour-oriented SAM focuses on the value added categories that remunerate labour, i.e. on compensation of employees and on mixed income. Compensation of employees is broken down according types of work and gender. Mixed income may be analysed by characteristics of the self-employed. The expansion of these sub-matrices shows the amount of money paid by industries to the categories of labour used in the production process.

Workers: We would use the following top-down method to distribute the value added by workers:

- First, annual wages and salaries per capita are calculated by gender, industry and education using the provisional dataset
- then wage sums by type of labour are estimated by multiplying per capita wages and salaries by the annual average number of employees taken from the NSSO. This gives a matrix W_{ij} ($i=1$ to 4, and $j=1$ to 20) (i refers to type of labour and j to the branch of industry)

- finally, estimated wage sums of matrix W_{ij} are calibrated using national account totals by industry, and national accounts distribution by type of labour, as row and column constraints.
 - Also, compensations of labour (wages and salaries plus employers' social contributions) to be estimated using the estimated $W'y$ matrix to be calibrated using the national compensations by industry.
- A similar method would be used for the mixed income of self-employed persons.

Households:

The classification of households in the proposed SAM is based on the main source of income of the household, and contains a minimum of four types.

1. Wages and salaries - employees
2. Mixed income including property income - employers (including own-account workers) and recipient of property income
3. Income in connection with old age (retirement) - recipients of pensions
4. Other transfers income (including other households) - recipients of other transfer incomes and other households.

We would use the LO-SAM to examine the relationship between the distribution of income and green growth. As the accounting structure of SAMs can be used for all kinds of analyses. These include simple analyses of income level and distribution changes and 'Keynesian' multiplier analysis, 'fixed price' analysis. As a next step we would develop a LO-CGE based on this LO-SAM for India for green sector analysis.