

Identifying key sectors for Green Growth in India: An Environmental Social Accounting Matrix multiplier analysis

Topic: Environmental Input-Output Modeling

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The recently released 12th Five Year Plan document of India has talked at length on achieving economic growth concomitant with conservation of natural resources, minimising environmental pollution, promotion of clean source of energy and improvement in energy efficiency in all sectors. It has budgeted substantial fund for improving environment. However, the plan document has been silent regarding the quantification of the environmental impact of various sectoral investment goals. Nor it has been attempted to justify whether the target growth rate (9% during the period 2012-17) would be achieved with minimum environmental damage.

Given the importance of green growth, many countries nowadays produce environmentally extended social accounting matrix (ESAM) so that one can quantify the environmental effect of desired sectoral investment or growth. Since ESAM is an extension of a Social Accounting Matrix (SAM), the multiplier derived from ESAM will produce direct and indirect induced impact of the policies on economic growth and environment, which may be used for understanding sectoral impact of investment/growth on environment. To our best knowledge, no attempt has been made to construct ESAM for India.

Therefore the first objective of paper is to construct an ESAM for India. Secondly, to estimate green growth index based on sector specific multiplier effects on GDP growth, growth in employment, income growth, GHG emissions and energy use. Index reveals that the cereal productions other than rice and wheat can be given higher priority to promote green economic growth. Meanwhile the hydro electricity production will be in high priority followed by other industrial activities. Finally this study finds that, the existing pattern of government expenditure is sub-optimal as its reallocation based on their green growth index increases GDP by 1%, reduces GHG emission by 1.57% and increase employment by 2.57%.

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