Double dividend strategy for clean development: Allocating consumption based environmental responsibility of coal production amongst Indian states

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Author: Surabhi R. JOSHI

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Presenter: Surabhi Joshi, Coordinator (India), Regulatory Assistance Project's E3-India Project
Email: joshisurabhi23@gmail.com

Abstract
The study explores impacts of developing effective interstate compensation mechanism for allocating consumption based environmental responsibility of coal production amongst Indian states . Major coal bearing states of India (Jharkhand, Chhattisgarh, Odisha, Madhya Pradesh and West Bengal) are characterized by low economic growth and poor development trajectory. Further the quality of life of the population in the states is compromised due to huge environmental burden of coal mining process.

The paper simulates impacts of policy intervention where consumption based carbon tax is imposed over high GDP, high energy consuming states of India and tax revenue is used in coal bearing states for a)Increasing Process efficiency & b) Enhancing House hold social security using E3 India modelling tool.

E3 India is a dynamic macro-econometric simulation model which provides an integrated treatment of the India's state economies , energy systems and emissions along with capturing two way linkages and feedback (E3). The baseline simulation available till 2035 was modified to include following state specific policy interventions
1. A Rs 400/ Ton of carbon consumption tax on high GDP & High energy consuming states
2. The revenue tax is used towards
i)Investments in Process efficiency in coal bearing states
        ii)Investments in Social transfers in coal bearing states
Initial trend run indicate that a carbon tax enhances energy efficiency in high energy consuming states while energy efficiency incentives improve environmental performance of coal bearing states. Further increased social security leads to poverty reduction indicated by improved disposable income or consumer spending in the states.
The study thus provides an evidence towards scope , effectiveness and synergies of consumption based taxation as a strategy towards cleaner development for an emerging economy like India.