

## **Evaluating socio-environmental liabilities of coal mining in Cesar, Colombia**

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### **Abstract**

Coal mining in Cesar, Colombia increased by 74% between 2000 and 2012, generating environmental and social damages unquantified by multinational mining companies and the State. This study values socio-environmental liabilities imposed by coal mining in Cesar at different stages of the coal life cycle. To identify socio-environmental liabilities, interviews were conducted with stakeholders, and environmental mining conflicts were analyzed. To estimate monetary values, data was linked to existing literature on the costs associated with such damages. Results show that throughout the coal life cycle the economic value of socio-environmental liabilities per ton of extracted coal in Cesar are higher than the market price of coal. At local scale the main socio-environmental liabilities are pollution, public health deterioration, water table depletion, land loss, ecosystem services loss. At national scale, damages by transportation and shipment of coal, and coal reserves loss. A comparison with existing studies in China and the United States indicates that values increase when public health and climate change on a global scale are included. The study concludes that the environmental liabilities can be operationalized under three responsibilities: ethical, legal, and economic. The identification of environmental liabilities allocates ethical responsibility; the legal responsibility is needed for effective reparation; and the economic valuation provides arguments to claim compensation, seek remediation and mitigation of damages.