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Methodological and Ideological Options

Valuation Languages Along the Coal Chain From Colombia to the Netherlands and to Turkey

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ABSTRACT

Environmental goods and bads are accumulated and unequally distributed along the coal supply chain, producing environmental injustices where actors deployed values and representations of coal to either resist or legitimize its extraction and consumption. This paper analyzes those valuation languages along the coal chain and their relationships with the territory where coal is extracted and burned. The paper examines and compares the coal chains between Colombia-Netherlands and Colombia-Turkey, assessing the various dimensions of the ecological distribution conflicts. The coal chain is analyzed through different layers and scales. To identify the valuation languages along both coal chains, semi-structured interviews and secondary data analysis were conducted. Discourse analysis methodologies were used to determine the frequency and relevance of the valuation languages. Results show that multiple valuation languages appear, which are peculiar to each country and to the economic and political contexts in which the different stages of coal chain are embedded. Environmental justice actions taken along the coal chain with the focus on acknowledging these multiple valuation languages are also discussed. In conclusion, the analysis reveals that these actions depend on the willingness of social actors to give up or negotiate their valuation languages or on the power to impose them.

1. Introduction

Although the COP21 Paris Agreement actions do not match long term goals on a clear path towards reducing CO_2 emissions, it marks a new direction for energy and climate change policies across the world that question coal industry (CAT, 2015; Wood-Mackenzie, 2016). On the one hand, the coal industry promotes new coal-fired power plants (CFPPs) as a solution to energy poverty and sustainable development through Carbon Capture and Storage (CCS) and High-Efficiency, Low-Emissions Technologies (WCA, 2015, 2011). On the other hand, as a new study recalculating the climate change mathematics, Muttitt et al. (2016) warn about the potential of carbon emissions from the coal, oil, and gas industry in the world's currently operating fields and mines, which could take us far beyond 2 °C of warming. Moreover, even if we stop burning coal, the currently operating oil and gas reserves alone would take the world beyond 1.5 °C. Climate justice movements are claiming that "we cannot dig any new coal mines, drill any new fields, build any more pipelines… if we want to prevent global warming… keeping fossil fuels in the ground is the only realistic approach." (McKibben, 2016). Therefore, the fossil fuel use and climate change are locked in a zero-sum game (Krane, 2016).

A number of different international NGOs have also questioned the entire coal supply chain (AbdelGawad et al., 2015; Harris et al., 2016; Heinrich-Böll-Stiftung and FoE, 2015; Ortiz et al., 2014; PAX, 2014; Re:Common, 2016; Schücking and Rötters, 2016; Shearer et al., 2015; Torres et al., 2015; Wilde-Ramsing and Rácz, 2014; Wilde-Ramsing and Steinweg, 2012). They have reported that the coal supply chain not only produces CO_2 emissions but also damages natural ecosystems, generates air and water pollution, causes agricultural losses, communities displacement, public health loss, and human rights violations.

Some studies have attempted to assign an economic value to the socio-environmental cost of coal. For example, Epstein et al. (2011) estimated a broad range of costs associated with the coal chain (from extraction to combustion), demonstrating that if health and environmental externalities produced by coal were included in its price, the general American public should pay an additional US$ 345 billion,

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which corresponds to 17.8 ¢/kWh for electricity generated from coal. These values are higher than the regular electricity price per kWh.[3] In a previous study (Cardoso, 2015a), applying a similar approach, estimated the economic value of the socio-environmental cost of coal mined in Cesar, Colombia for export. The key socio-environmental costs identified were those arising from pollution, public health risks, groundwater depletion, land and ecosystem services losses, community displacement, loss of sacred territories and cultural heritage, damages from transportation and shipping, and coal reserve loss. Climate change costs were not considered. These costs were valued at between US $114.54/t–US$167.52/t (updated to 2015 prices), which is almost the triple of the market price of one ton of coal. Meanwhile the coal prices are decreasing and government justifications for mining-led development rang increasingly hollow (Cardoso, 2015b). However, the economic valuation of the social cost of coal fails in the sense that numerous socio-environmental costs cannot even conceivably be calculated in monetary terms and should be accounted for in their own values. Those different valuation languages are all relevant and should be included in the ecological economics of climate change and the coal industry.

Colombia is not among the top ten producers (ranking 11th in the world) but it is the world's fourth largest net exporter of hard coal, after Indonesia, Australia and Russia (IEA, 2016). The Netherlands is the largest buyer of Colombian coal in the world, closely followed by Turkey, which is in the second place. In 2015, 18.4% and 15.4% of the Colombian coal was exported to the Netherlands and Turkey, respectively. The coal exported by Colombia comes mainly from Guajira and Cesar states, where coal is extracted from open-pit mines, then lightly processed on the surface, transported by train, and uploaded to cargo vessels at the docks in the Caribbean (Fig. 1A). These vessels land at the ports of Rotterdam, Amsterdam, or Ijmuiden in the Netherlands (Fig. 1B) or at the ports of Iskenderum, İçdaş, Zonguldak or Istanbul in Turkey (Fig. 1C). Along each stage of the coal chain, the environmental goods and bads are accumulated and unequally distributed, producing multiple landscapes of environmental injustices. The social actors involved use different arguments to complain or defend the use of coal, either to resist or to legitimize ways of extracting and consuming this natural resource.

This study seeks to incorporate the alternative voices, epistemologies and ethics that are used to reveal the ecological distribution conflicts along the coal chain. Ecological distribution conflicts refer to struggles that emerge from the structural asymmetries in the distribution of the burdens of pollution, the different levels of sacrifice made to extract resources, or from the discrepancies in the access to natural resources. Such conflicts are grounded in unequal distributions of power and income, as well as in social inequalities of ethnicity, social class and gender (Martinez-Alier et al., 2010; Martínez-Alier and O'Connor, 1996; Robbins, 2004). More specifically, this study analyzes the ecological distribution conflicts of the coal chains between Colombia-Netherlands and Colombia-Turkey. It questions how the actors' valuation languages and their own "coal representations"[4] are defended and handled in accordance with their specific position within the coal chain and their relationship with the territory where coal is extracted and burned. Assessing and comparing both these coal chains through the analysis of the valuation languages enables us to better comprehend the various dimensions of the ecological distribution conflicts and differentiate between valuation languages deployed in each country.

Section 2 outlines the theoretical framework of commodity chain analysis and explores the definition of valuation languages. Section 3 explains the methodology. Section 4 analyzes the coal chain through different layers (market, physical, socio-environmental liabilities, the actors and their valuation languages) and scales (local, national and global). Section 5 presents the Colombian case on coal extraction, followed by the description of the coal imports and consumption in the Netherlands (Section 6) and Turkey (Section 7). Section 8, analyzes the valuation languages along the coal chain, and finally, Section 9 discusses the environmental justice actions along the coal chain that try to acknowledge those multiple valuation languages and presents the conclusions.

2. Coal Chain Analysis and Valuation Languages

Commodity chain (CC) as an analytical frame was introduced by Hopkins and Wallerstein (1977) to describe the territorial influence of capitalism. Later, the book edited by Gereffi and Korzeniewicz (1994) introduced Global Commodity Chain (GCC) analysis which identified the following different dimensions: the input-output process; the geographical scope; the governance structure, including power relations and chain drivers; and the institutional context. The unit of analysis is not the commodity itself, but rather the whole global economic and political system in which the commodity is embedded (Smith and Mahutga, 2009). Moreover, each CC has its own history, its own geographical space, its own conflicts and governance structure (Bair, 2009).

Ciccantell and Smith (2009) proposed extending the GCC analysis that incorporates the extraction of raw materials by including the examination of techniques and technologies applied in extractive regimes, as well as the environmental degradation and the mobilization of social movements that this entails. Extending the analysis to the consumption phase implies that GCC also deals with the final waste disposal phase, including the global issue of greenhouse gasses in the case of coal. Similar to the oil CC presented by Bridge (2008), coal is extracted from the environment, commodified through trade, and at the end of the chain de-commodified through its consumption, dissociation and the disposal accumulated as air pollution or CO_2 emissions. The North-South linkage along the CC makes it ideal for contributing to the current debate on ecological debt[5] and ecologically unequal exchange (Ciccantell and Smith, 2009; Hornborg, 1998; Hornborg and Martinez-Alier, 2016; Talbot, 2009). Concerns about the transparency of CC also raise the following questions: Who benefits? Who is at a disadvantage? The answers to these questions depend on the structures of chains, their geographical distribution, and their forms of governance (Guthman, 2009; Talbot, 2009).

The different CC methodologies are both descriptive and normative; they can be employed to describe or to explain, to create transparency, and to capture or to redistribute value (Guthman, 2009). Alternative analytical frameworks also exist, such as the French filière to analyze the agricultural commodities (Raikes et al., 2000) or the feminist CC approach that includes an ecological perspective and a gendered analysis integrating race, age, and regional differences (Barndt, 2008; Ramamurthy, 2004). This study uses the CC approach to analyze how environmental goods and bads are accumulated and distributed along the coal chain and how these produce ecological distribution conflicts. The CC approach allows to incorporate "mapping the connection of micro-political ecologies" and "linking disparate sites of injustice by exposing their positions along a chain" (Robbins, 2014:233); and to

[3] They included the cost of the whole coal chain. Particularly, the cost of the coal combustion could reach US$ 392.26/t–US $ 1977.71/ton per ton (updated to 2015 prices). These values are used in Fig. 2. Epstein et al. (2011:20) presented the costs in terms of ¢/kWh. A conversion to tons of coal equivalent was made: 1 t coal equivalent = 8141 kWh. Source: http://www.unitjuggler.com/convert-energy-from-tSKE-to-kWh.html.

[4] This expression is used throughout the paper to express the meanings and representations that people attach to coal.

[5] This debate was started by Latin America environmental organizations in 1992. According to Acción Ecológica the Ecological Debt is the responsibility of industrialized countries for the gradual destruction of the planet as a result of their forms of production and consumption, the disproportionate occupation of the carbon sinks, and the ecologically unequal exchange, because goods are exported without taking into account the social and environmental damage http://www.accionecologica.org/deuda-ecologica.