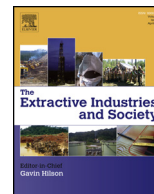




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Original article

Wasteland by design: Dispossession by contamination and the struggle for water justice in the Ecuadorian Amazon

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ABSTRACT

Considering the ongoing intervention of the open-pit large-scale copper mine, Mirador, in the Southern Ecuadorian Amazon, this article discusses divergent understandings of socio-environmental transformation. While the mining industry and competent authorities approach the future of this area in terms of manageable risks and practices of accountability, popular environmentalists express their concerns in terms of environmental damage. Parting from a water justice perspective with a specific focus on 'dispossession by contamination', a view on in-compliance with established standards and the environmental management plan is problematized through a critical reading of the last Environmental Impact Assessment to the project, observations of ongoing waste-practices related to the mine, and empirical accounts of the affected population's counterwork. The main argument is that the Mirador project has the potential to convert the 'zone of direct influence' into a wasteland, a slow-motion transformation that is accompanied by a process of 'wastelanding', i.e. the discursive tactics that justify waste dumping in the hydro-social landscape. With an empirical focus on water related aspects of transformation, the article considers how popular environmentalists' counterwork both tap into the rationale of risk management and accountability, and at the same time try to exceed it by addressing systemic dimensions of change.

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1. Introduction

The Ecuadorian Government, under the leadership of President Correa, views industrial mineral extraction as one of the country's emerging 'strategic sectors'. As part of a policy to strengthen the public sector and improve social welfare, the Correa regime has actively promoted the growth of the energy sector and extraction of non-renewable natural resources. Although heavily oil-dependent, the government views minerals as one avenue to diversify the Ecuadorian economy, and this diversification comes together with reforms in the mining legislation and the building of alliances with alternative international financiers, especially with Chinese capital.

At the same time, large-scale industrial mining is highly contested by environmentalist and indigenous movements. Resistance to industrial mineral extraction is associated with the issues of water contamination, land evictions, and threatened rural livelihoods. These issues are central to the ongoing conflict around the first and emblematic example of Ecuador as an emerging mining nation: the Mirador project. Owned and operated by a

Chinese consortium, Ecuacorrientes (ECSA),¹ the large-scale open cut mining project aims to exploit the riches of Ecuador's south eastern copper belt, situated in a lower-lying and tropical mountain range named the Cordillera del Cóndor, in the Amazonian province of Zamora Chinchipe. This industrial mining project is located in a highly biodiverse environment populated by mixed rural populations predominantly engaged in livestock herding and small-scale agriculture.

When the last of the Environmental Impact Assessments (EIAs) of the Mirador project was presented to the public in March 2015, the design of an extensive future waste infrastructure attracted attention. In particular, the planned construction of two tailings reservoirs caught the attention of the population of Tundayme, the parish formally recognized as being 'under direct influence' of this large-scale industrial mining endeavour. Now in its late construction phase, the changes and contamination problems that the Mirador project has occasioned so far are the results of exploration work and the construction of a mining camp and infrastructure. This unearthing, however, has fuelled concern in the affected

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¹ The consortium consists of two Chinese State companies, Tongling Non-Ferrous Metals and China Railway Construction Corporation.

population about the future of mineral extraction, and about more serious contamination problems when the company starts to extract copper ore. According to the plans presented by a consultancy firm on behalf of ECSA and approved by Ecuadorian environmental authorities, the waste infrastructure design forecasts immediate and long-term consequences, the eradication of a rural community (San Marcos), and serious exposure of contaminants into the hydro-social landscape. But the perceptions of these changes are wide-ranging. While representatives of the mining industry see the future developments of this area as having manageable risks, popular environmentalists continue to express concern about potential environmental damage, increasingly framing their views in a language of justice.

This article explores these divergent positions using four interconnected analytical approaches. Taking stock of some of the details of the design of the Mirador project as presented in the last EIA, I reflect critically, in the next section of the paper, on the socio-environmental transformation implied in this design and the ways in which this transformation ties to waste accumulation. Reading the EIA in more detail, one can envision the material and discursive creation of a future wasteland. The knowledge practices involved here and which *Voyles (2015)* terms 'wastelanding' are elaborated further in the third section of the article. In focus, here, are a set of accountability practices (*Li, 2009, 2015*) that serve to enclose Tundayme as a site of risk (*Hébert, 2016*) using managerial rationale. This comes about through authoritative uses of scientific knowledge known as 'techno-science' (*Hébert, 2016*) and corporate science (*Kirsch, 2014*). Central to the use of scientific knowledge the rationale carved of out them is an understanding of socio-environmental impacts as anticipated problems that find their solution within environmental management schemes and plans. Enclosure of this kind (cf. *Murray Li, 2007*) generates externalities that are not recognized by the Environmental Management Plan (EMP), and consequently neither by the mining company nor competent authorities. The issue of externalities is discussed further with a focus on water contamination. Based on ongoing research (*Hogan, 2015; Leifsen and Hogan, forthcoming*), conceptually-informed by *Harvey (2003)* and *Perrault (2013)*, we propose to describe the externalising of socio-environmental impacts as a potential 'dispossession by contamination'. The concept refers to a change of the material properties of water, which in its turn affects access.

In the fourth section of this article, I argue that dispossession of this kind already takes place in the parish of Tundayme, but there are divergent ideas about what it signifies. For the section of the affected population which engages in popular environmentalism and counterwork against the mining project, emerging contamination problems are not solely an issue of irregular and remediable mining activity. These problems are also part of the mining system, specifically, its design. Distinct from this view, the mining industry, and competent authorities such as the Ministry of the Environment, insist that the contamination which can be traced back to mining activity is a result of non-compliance with the established standards of risk management. In this section, I look more closely at the logic behind non-compliance and at ways in which this logic is tied to different aspects of recognition. In the fifth and last section before some final remarks, I present some empirical examples where counterwork both taps into the logic of non-compliance, and exceeds it, in different attempts to re-politicize the public understanding of transformation that the Mirador project brings about.

The analysis presented here is informed by various theoretical insights that problematize the structuring dynamics and practical contestations of what *Boelens (2013)* calls a 'cultural politics of water control'. It relates to an analytical framework for water justice structured around four different perspectives. These are:

distribution (taking account of the economic dimensions and inequalities regarding access), participation (addressing the political conditions and potential for change), socio-ecological relations (bringing in livelihood and sustainability dimensions), and recognition (visualizing the importance of cultural aspects and identity concerns) (cf. *Fraser, 2000; Schlosberg, 2004; Zwartveen and Boelens, 2014*). This study draws on findings from an ongoing research collaboration between the Observatory of Social-Environmental Conflicts (OBESA) at the Technical University of Loja (UTPL), and the Department for International Environment and Development Studies at the Norwegian University of Life Sciences.² Together, we form an inter-disciplinary research team spanning environmental engineering, law, and social anthropology. Data production is multi-sited and combines several disciplinary approaches. The main methodological strategies employed in producing the data that inform this article include various studies of a draft version of the last EIA,³ participatory observation of the socialization of the EIA, and an audio recording of the public hearing in the parish centre of Tundayme in March 2015. Participatory observation of a territorial planning process in the parish administration during 2015, together with several transect walks carried out with local farmers and members of the anti-mining association, CASCOMI, also generated important primary data. In addition, semi-formal interviews and informal conversations with local farmers, activists, public functionaries, and other persons living in Tundayme proved to be important sources of information. We have also made use of a range of secondary sources from the internet, and various independent reports on the socio-environmental impact of the Mirador project. Personally, I have carried out three periods of fieldwork, in November – December 2014, and in the months of March and August 2015.⁴ The research team at OBESA works continuously in the field.

2. Designing and making a wasteland

The Ecuadorian state has granted a total of 9925 ha of land in mining concessions to the Mirador project. In and around the mining site, in the parish of Tundayme, the ECSA company controls a total of 5284 ha of land which is dedicated to the mine's operation. The mine has an estimated lifetime of 35 years, and at maximum capacity, will process twenty million ton of rock, and produce 354 294 ton of concentrated copper annually, in addition to smaller amounts of other metals, such as gold and silver (*Cardno, 2014*). In the Cordillera del Cóndor, large-scale mining activity commenced in the early 1990s, beginning with geological and geochemical studies and a long period of exploration (cf. *Cardno, 2014; Warnaaars, 2010*), culminating in the signing of the first contract between the Ecuadorian state and a foreign company to extract metals on a large scale. The copper mine is located in a humid tropical environment,⁵ in an area which forms part of a small watershed consisting of the Wawayme, Tundayme, and Quimi Rivers that connect with the Zamora-Santiago river basin. The parish centre and the majority of the rural neighbourhoods and indigenous Shuar communities are located in this area, and this is where we find most of the human activity occurring.

² The research forms part of the project 'Extracting Justice? Exploring the role of free, prior and informed consent (FPIC), consultations and compensation payments related to socio-environmental conflicts in Latin America'. The project is financed by the Norwegian Research Council.

³ These studies were carried out by Maleny Reyes and Elaine Hogan.

⁴ A fourth period of fieldwork is carried out as this article is completed (from mid January to mid February 2017).

⁵ Annual average precipitation in this area varies from 1700 to 2300 mm. The altitude range of the Cordillera spans 760–2200 mas, and the populated area of the parish spans 760–1000 mas (*GADPR, 2015*).

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