The Extractive Industries and Society 2 (2015) 445–461

Contents lists available at ScienceDirect

The Extractive Industries and Society

journal homepage: www.elsevier.com/locate/exis

Mining amid typhoons: Large-scale mining and typhoon vulnerability in the Philippines

William N. Holden *

[a] Department of Geography, University of Calgary, Calgary, Alberta T2N 1N4, Canada

ARTICLE INFO

Article history:
Received 30 January 2015
Received in revised form 29 April 2015
Available online 18 May 2015

Keywords:
Philippines
Mining
Typhoons
Climate change

ABSTRACT

This article examines the problems inherent in locating large-scale mining projects in the Philippines, a nation vulnerable to typhoons and heavy rainfall events. The government of the Philippines has emphasized large-scale mining as a method of achieving economic development but the Philippines are highly vulnerable to typhoons and heavy rainfall events, which can adversely impact large-scale mining projects thus degrading the natural resources relied upon by the rural poor. With climate change, typhoons are becoming more powerful, and more unpredictable, and this further complicates the difficulty of attempting to rely upon mining as an agent of development.

1. Introduction

On 31 October 2005, during a heavy rainfall event, cyanide contaminated mine wastes were spilled into the Albay Gulf in the Bicol Region of the Philippines (Holden and Jacobson, 2012). These mine wastes came from the Rapu–Rapu Polymetallic Project, then being operated by Australia's Lafayette Mining. This spill, following another one earlier that month caused by a malfunctioning pump, had profound implications upon those living on the Albay Gulf. After the spill there was substantial concern about whether fish caught in the Albay Gulf near Rapu–Rapu Island were safe to eat due to the presence of cyanide in the tailings and this concern caused the sales of fish caught in the Albay Gulf to fall off to almost zero. After the spill, fishermen had to leave their families to look for work in Manila and other nearby cities. Women found it necessary to find alternative employment taking them away from child-rearing duties while older children were recalled from school to help with household chores and to look after younger children. Some fisherfolk reported that they were forced to sell their fishing equipment in order to raise money; consequently, they would no longer be in a position to return to traditional fishing activities without assistance. According to Father Ramoncito Segubiense, the Director of the Social Action Center of the Diocese of Legazpi, the tailings spills caused up to 90% of the livelihood of the local people to be lost; those people who still fish in the area must now go progressively further and further out to sea in order to catch any fish (Segubiense, 2009). This spill of mine waste illustrates the focal point of this article: the problems inherent in locating large-scale mining projects in the Philippines, a nation vulnerable to typhoons and heavy rainfall events. Attempting to rely upon large-scale mining as a method of accelerating economic development in such a setting can be problematic; it can degrade the environment relied upon by the rural poor for their subsistence activities and actually cause them to become poorer. The article begins with an examination of what constitutes a disaster. This is followed by a discussion of large-scale mining; the vulnerability of the Philippines to typhoons and heavy rainfall events is examined, including the exacerbation of this vulnerability by climate change. The technocratic solutions offered by the government and the mining industry are discussed and the article concludes by discussing how actors opposed to mining, principally local government units, have reacted to the dangers of mining amid typhoons.

Two methodological approaches were employed in researching this topic: interviews and map overlay analysis. Field trips to the Philippines were conducted in 2004, 2005, 2007, 2009, and 2012; during these field trips, a series of interviews were conducted with approximately 60 key informants selected for their knowledge of the topic under study. These informants included: members of communities adjacent to large-scale mining projects, government officials, environmental activists, and human rights activists. The interviews were semi-structured with preconceived questions being asked with enough flexibility being granted so as to allow a pursuit of any unanticipated lines of discussion emerging during the interview. Maps were made by taking data detailing the location of large-scale mines and overlaying this data upon map layers of typhoon vulnerability and projected changes in rainfall.

* Corresponding author. Tel.: +1 403 220 4886.
E-mail address: wnholden@ucalgary.ca (W.N. Holden).

http://dx.doi.org/10.1016/j.exis.2015.04.009
2214-790X/

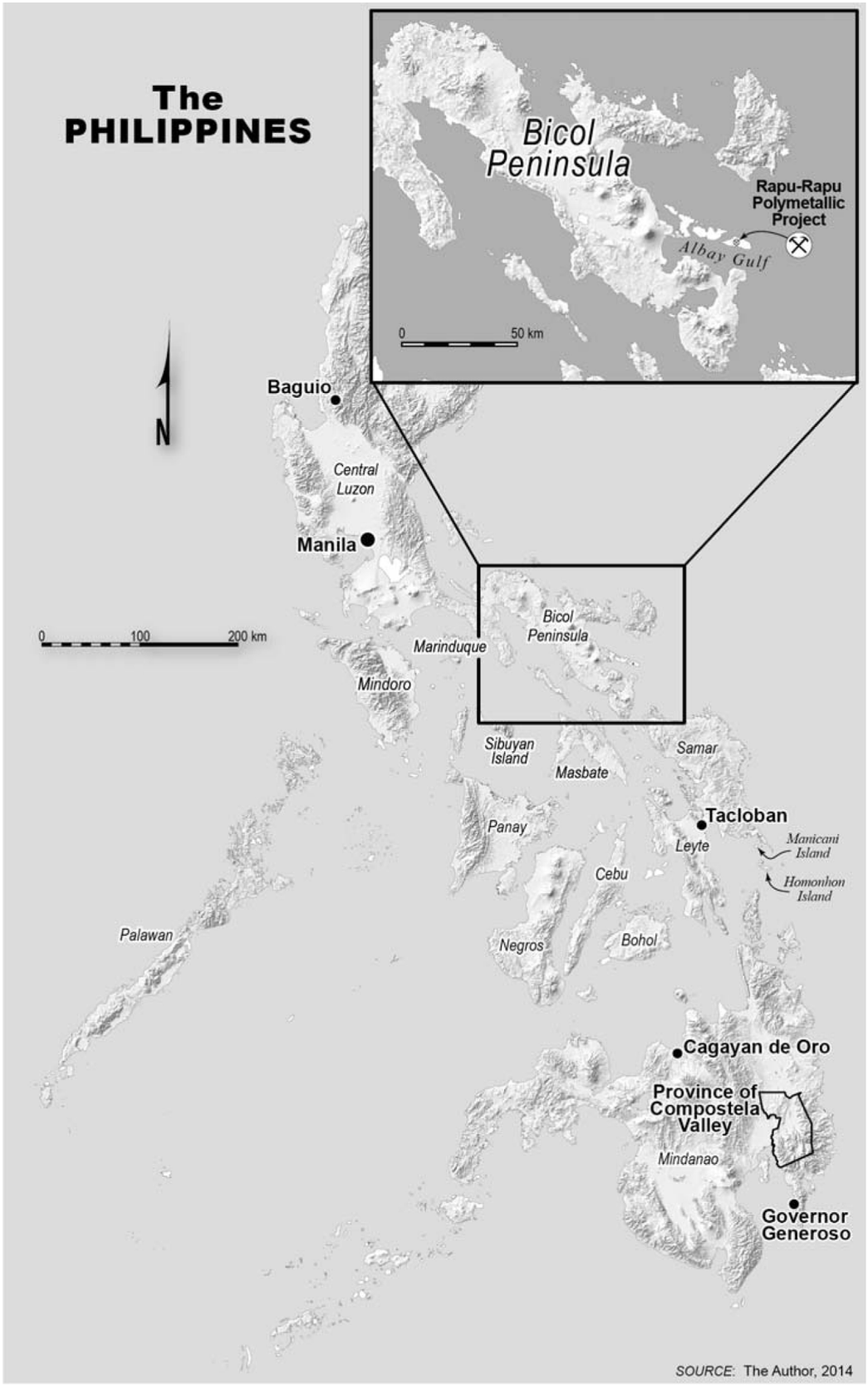

Fig. 1. The Philippines.

Source: The author, 2014