



Historicizing Sustainable Livelihoods: A Pathways Approach to Lead Mining in Rural Central China

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Summary. — This article adopts a “pathways to sustainability” approach to study lead mining in rural China. Through an in-depth case study, it reveals how shifting mining practices are tied to institutional and political economic contexts, cost-benefit distribution, and changes in livelihood resources and strategies. It weaves together an analysis of livelihood practices with a study of attitudes to livelihood and environment, which are usually researched separately. In turn, it demonstrates that a longitudinal analysis may resolve the contradictory accounts of whether mining aids or hinders development, and whether local communities are victims or beneficiaries of such development.

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1. INTRODUCTION: MINING AS DEVELOPMENT?

The proposition that mining should be evaluated in terms of its contribution to development is often advocated by governments, elites, and mining companies. The narrative of mining as a path toward rural development and widespread poverty reduction has underpinned its liberalization, presented as an effective way to generate rural employment and new income sources. This trend has become increasingly prominent across the developing world (Ghose & Roy, 2007; Kamlongera, 2011; World Bank, 2009). On the surface, China’s experience seems similar. China’s long history of mining made a substantial leap after 1949, when the Communist state embraced it as an engine for rural development and rapid economic growth alongside rural industrialization (see Bramall, 2006; Tilt, 2010; Wright, 2011). Mining activities increased even further after the partial liberalization and economic reforms began in 1978, allowing the emergence of small private mines alongside state-owned enterprises (SOE). It is estimated that in China, the mining industry created employment opportunities for over 6.52 million people in 1978, reaching a peak of 9.32 million in 1993 and decreasing to about 5.5 million jobs in 2010 (National Bureau of Statistics of China, 2009, 2011). While these figures do not distinguish between rural and urban areas, it is reasonable to assume that the majority of these jobs are in rural areas (where most mines are situated), therefore boosting rural development. Yet the contribution of mining to China’s rural development remains poorly understood (see however Gunson & Jian, 2001; Wright, 2011). This article aims to evaluate its importance and side-effects through one in-depth case study on lead mining in Qiancun village, Central China.¹

Any easy equation of mining with development is disproved by much scholarship which shows that its benefits and costs are unfairly distributed. A structural political economy of mining focuses on questions of resource ownership, access and control, and asymmetries of economic and political power (Bridge, 2004, p. 234). This approach does not see mining as a path out of inequality but as one that entrenches it further (Bridge, 2004, p. 240). However, the relationship between mining and development and the ways in which local communities

relate to mining is much more complex than a narrative of victim *vs.* perpetrator would convey. Indeed, conflicts surrounding mining are not between monolithic and clearly divided groups such as mining corporations which extract wealth and poor local communities who suffer the effects of mining. The link between mining and development is contentious, delivering “adverse social, environmental and economic effects for the many, but significant gains only for the few;” but it is also ambiguous, “because of the abiding sense, among local populations as much as development professionals, that just maybe mining could contribute much more” (Bebbington, Hinojosa, Bebbington, Burneo, & Warnaars, 2008, p. 887). Indeed, despite the high human and environmental costs, local communities often defend mining (see Kirsch, 2007). Extraction is symbiotically situated within local economy and society. As June Nash famously showed for tin mining in Bolivia, “we eat the mines and the mines eat us” (1979; see Bebbington, Hinojosa *et al.*, 2008, p. 888). Similarly, Tim Wright (2004) demonstrated for coal mining in China that

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localities depend heavily on small mining operations to raise revenue and villagers rely on them for employment.

This article contributes to these debates by providing a genealogy of the ambivalent and shifting attitudes toward mining present in Qiancun village over a long time period. It illustrates how different relationships between mining and development may prevail in the same place at different points in time and therefore a historical approach is required to assess the relationship between them. In adopting the sustainable livelihoods approach (SLA), it demonstrates that changes in China's political economy and its policy context over the past six decades have triggered shifts in the role of lead mining as a livelihood resource and the rise of concerns with sustainability. In doing so, it provides a more nuanced and diachronic perspective on the extent to which Qiancun villagers are able to rely on mining as a livelihood strategy, how costs and benefits are distributed, and how this affects local attitudes to mining. As mining damaged physical and natural capital with unequal financial returns, it motivated conflicts, demands for compensation, and the current desire to continue mining despite awareness of its unsustainability. As such, this article contributes to understanding the complex relationship between mining and development, and the ways in which mining ultimately undermines sustainable livelihoods for those left behind by development. It shows that villagers evaluate the role of mining in local livelihoods not only in terms of its economic costs and benefits but also in terms of fairness and the distribution of opportunities and resources such as health and a clean environment.

2. SUSTAINABLE LIVELIHOODS AND THE PATHWAYS APPROACH

For over a decade, the study of rural development has employed the concept of livelihoods as a means to understand and respond to rural poverty (Scoones, 2009, p. 171). This line of research, also known as the "sustainable livelihoods approach" (or SLA) emphasizes rural people's embedded and holistic view of their lives and environment (Chambers & Conway, 1992, p. 296; Conway, 2011, p. 87; Long, 1997, p. 11). This involves paying attention to context, livelihood resources, livelihood strategies, and institutional processes (Scoones, 1998, p. 4) and to different types of capital, including natural, financial, human, and social (Scoones, 1998, p. 8). SLA aims to convey the dynamism of the lives of rural people in developing countries, and the range of factors which have an impact on livelihood strategies and outcomes (see Maconachie & Binns, 2007; Scoones, 2009; Stocking & Murnaghan, 2001).

SLA's recognition of the diversity of rural experiences beyond farming is a useful tool for analyzing the complexity of rural livelihoods and the place of mining within them. However, livelihood studies have not examined in sufficient depth the potential of mining as a rural livelihood option. This article addresses this gap. We argue that lead mining has particular potential for the application of SLA and for contributing to its development, because of the severe and largely irreversible damages mining causes, particularly to health and local ecology. By undermining its own sustainability, mining entails an inherent tension between the potential for producing wealth and long term damages. It therefore presents a good case study to understand temporal transitions between livelihood strategies and to highlight pressing issues of social justice to which SLA is committed. As both a threat and an opportunity for development, it presents a productive case to conceptualize livelihood in broader terms than simply economic ones.

SLA has been critiqued for a lack of attention to knowledge, politics, scale, and dynamism (Scoones, 2009). The volume *Dynamic sustainabilities* (Leach, Scoones, & Stirling, 2010) sets out to overcome these shortfalls. It proposes a "pathways approach" to critique monolithic and evolutionist views of development and progress and highlights that different social groups understand and value livelihood differently. In doing so, it emphasizes dynamism and flexibility, and giving space to multiple voices, particularly those who are typically marginalized. However, this volume is intended more as a methodological guide and does not contain detailed case studies. By contrast, this article applies the pathways approach to an in-depth case study of mining in China, thereby extending the geographic reach of the livelihood approach (and particularly the pathways to sustainability approach) to China and its thematic reach to heavy-metal mining.

This article adopts a critical approach to SLA in several ways. First, it advocates a study of longer timescales in analyzing the costs and benefits of mining and livelihood strategies more broadly. Several studies in the developing world have argued that mining enables livelihood diversification and provides an effective strategy to generate rural employment, technological skills, new income sources, and economic development while reducing poverty and migration to urban areas (Banchirigah & Hilson, 2010). For instance, in India (Ghose & Roy, 2007), Sierra Leone (Cartier & Burge, 2011; Maconachie, 2011; Maconachie & Binns, 2007), Ghana (Amankwaha & Anim-Sackey, 2003; Hilson, 2010), and Tanzania (Kwai & Hilson, 2010), mining is seen as a means of poverty alleviation which provides a sustainable livelihood as a complement to agriculture. By contrast, this case illustrates that in areas of intensive artisanal small-scale mining (ASM), and where potentially toxic materials like lead are involved, this relationship is only temporary. It does this by examining the uneven and shifting effects of mining on local livelihoods in different phases. In doing so, it highlights the fluidity of definitions of livelihood and shifts in strategies deemed suitable to obtain it, responding to previous critics accusing SLA of excessive stability. By engaging closely with a single case study, it showcases dynamism and provides an analysis of the specific institutional, political, economic, and ecological context and how it has shifted over the past 50 years. Tracing changes over time also allows us to understand present attitudes more clearly.

Second, it pays due attention to questions of social justice and structures of inequality by highlighting the uneven patterns of cost and benefit for different social groups at different times. This produces a portrayal of the political economy of mining in Qiancun and its shifting role within a heterogeneous range of livelihood strategies employed by villagers. Third, by focusing on the voices and experiences of villagers, it provides a village-centered redefinition of livelihood resources and strategies, and how the feasibility and desirability of mining is evaluated. Importantly, Scoones highlights that there is no neat quantifiable algorithm for objectively measuring sustainable livelihoods and that people may have diverse criteria to define them (1998, pp. 6–7). This article shows how, why, and with what effects these criteria changed over time in Qiancun. It does this by dividing analysis into different periods and considering how changing contexts, uneven spread of costs and benefits and unequal access to different types of capital and livelihood resources affected perceptions of what counts as a livelihood and how to achieve it. This focus on the interplay between livelihood strategies and perceptions of the environment and sustainability in shaping local environmental subjectivities (Agrawal, 2005) is an innovative contribution to SLA.

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