Understanding risk and benefits of Informal (Artisanal small-scale) mining of manganese by peasants in Indonesia: A study on resource management and livelihood options in Kupang and TTS, West Timor, NTT

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# Abbreviations

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<th>Description</th>
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<tbody>
<tr>
<td>ADB</td>
<td>Asian Development Bank</td>
</tr>
<tr>
<td>ASM</td>
<td>Artisanal Small-scale Mining</td>
</tr>
<tr>
<td>AUD</td>
<td>Australian dollar</td>
</tr>
<tr>
<td>BAPPEDA</td>
<td>Badan Perencanaan Pembangunan Daerah (Local Development Planning Agency)</td>
</tr>
<tr>
<td>Bapedalda</td>
<td>Badan Pengendalian Dampak Lingkungan (Local Environment Protection Agency)</td>
</tr>
<tr>
<td>BLHD</td>
<td>Badan Lingkungan Hidup Daerah (new name for Bapedalda)</td>
</tr>
<tr>
<td>BPS</td>
<td>Badan Pusat Statistik (Statistic Bureau)</td>
</tr>
<tr>
<td>CBNRM</td>
<td>Community-based Natural Resource Management</td>
</tr>
<tr>
<td>CSO</td>
<td>Civil Society Organisation</td>
</tr>
<tr>
<td>EIA</td>
<td>Environmental Impact Assessment</td>
</tr>
<tr>
<td>FAN</td>
<td>Forum Academia Nusa Tenggara Timur (NTT's Academia Forum)</td>
</tr>
<tr>
<td>FDG</td>
<td>Focus Group Discussion</td>
</tr>
<tr>
<td>FMP2D</td>
<td>Forum Masyarakat Peduli Pembangunan Daerah (Local NGO)</td>
</tr>
<tr>
<td>FNSMS</td>
<td>Food and Nutrition Security Monitoring System</td>
</tr>
<tr>
<td>GDP</td>
<td>Gross Domestic Product</td>
</tr>
<tr>
<td>GMIT</td>
<td>Gereja Masehi Injili di Timor (Christian Presbyterian Church in Timor, the second largest Christina Church Organisation in Indonesia)</td>
</tr>
<tr>
<td>GMP</td>
<td>Good Mining Practices</td>
</tr>
<tr>
<td>GRDP</td>
<td>Gross Regional Domestic Product</td>
</tr>
<tr>
<td>HTI</td>
<td>Hutan Tanaman Industri (Industrial Plantation Forest)</td>
</tr>
<tr>
<td>IDR</td>
<td>Indonesian Rupiahs</td>
</tr>
<tr>
<td>ILO</td>
<td>International Labour Organisation</td>
</tr>
<tr>
<td>IUP</td>
<td>Ijin Usaha Pertambangan (Business Mining License)</td>
</tr>
<tr>
<td>IPR</td>
<td>Ijin Penambangan Rakyat (People Mining License)</td>
</tr>
<tr>
<td>IPK</td>
<td>Ijin Penambangan Khusus (Special Mining License)</td>
</tr>
<tr>
<td>KLHS</td>
<td>Kajian Lingkungan Hidup Strategis (Strategic Environmental Assessment-SEA)</td>
</tr>
<tr>
<td>KUD</td>
<td>Koperasi Unit Desa (Village Cooperatives Group)</td>
</tr>
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Abstract

The rapid expansion of manganese mining in West Timor has raised a debate on whether the mining is a boon or peril for the local people. Many local peasants have shifted their livelihood from agriculture subsistence to artisanal small-scale mining (ASM) of the manganese. This cash-based economy has benefited the local people to some extent, including cash for foods and basic goods. However, the high demand of the ore, poor skills as well as legal uncertainty have led to massive environmental degradation, loss of human lives, illegal trading and social unrest.

ASM activities are common in developing countries around the world, from Asia to Africa, which are struggling with poverty issues, lack of alternative livelihoods, poor education, and legal uncertainty. Decentralisation has created huge pressure on the local government to increase revenue to balance the growing expenditures of East Nusa Tenggara (Nusa Tenggara Timur-NTT). NTT is listed as one of the poorest provinces in Indonesia. The income per capita of this province is less than one fourth of the national average. This province is also prone to natural disasters such as droughts, flooding, typhoons, and fires which make this area have a long history of food insecurity. The province is well-endowed in manganese resources, and mining this mineral is considered by the local government to be one of the ways to potentially boost economic growth.

The objective of the research is to explore how the manganese mining in West Timor has benefitted the local peasants and to provide recommendations for policy makers in formulating policy intervention. This research used a qualitative method in which primary data has been derived from fieldwork and secondary data was gathered from literature. The semi structured interviews with the six groups of respondents (local community, local Government, NGOs/CSOs, academia, church leaders and media) pointed out that ASM has the potential to provide economic benefits for the local people if it is managed sustainably. Therefore, immediate policy interventions to ensure fair price, legal certainty, and community empowerment are necessary to mitigate the negative environmental and socio-economic impacts.
Chapter 1 Introduction

Are the impacts from mining always negative? No, of course not, but often greatest benefits are felt by a very few at the expense of others (Richards 2005, p.27)

1.1 The Problem: Rights and access to commodity chain

Since 2008, *Mama* Debora has given up farming. She now makes a living from mining manganese, an activity that provides her AUD 2000 year-round income and enables her to send her children to school, refurbished her home and have some motorcycles (see Figure 1). Before the OBAMAs considered illegal, she could sell her manganese at around IDR 1000/kg of manganese ore (twice than the mining company fixed price). Like most of the local people, she believes that ASM is one of their alternative livelihoods that provide direct cash since agriculture is vulnerable to harvest failure due to prolong dry seasons, and also requires more time and effort.

However, Wahana Lingkungan Hidup (Walhi)\(^1\) argues that the mining activities has led to environmental degradation, triggered social conflict which reduced social capital, created health issue, decreased agriculture production, and had a political impact-marginalisation of public interest (Walhi 2010; Naif 2010; Ama 2010). The mining activities have also led to loss of human lives. Between 2009-2010, 21 people are reported dead caused by accidents and landslides in mining area. The age of these victims varies from 8 years-old to 80 years old women (Ngera 2010).

Despite being a rich mineral area, NTT is listed as one of the poorest provinces in Indonesia, with income per capita in 2008 at around 4.5 million rupiah (AUS 500) which is only 23 per cent of the national average. NTT’s gross regional domestic product (GRDP) in 2008 was around 21.6 trillion rupiahs (AUD 23 million) or 0.9 per cent of Indonesia’s gross domestic products (GDP) (BPS Indonesia 2009). Therefore, the local government considers that mining manganese ore will have positive impact on the region by increasing economic activity and providing employment.

BPS NTT (2009) indicates that NTT’s GRDP in current price increased 28 per cent, where agriculture contributes 40.4 per cent and the mining sector contributes 1.4 per cent. Between 2005 and 2008, NTT’s average per capita income increased by 22 per cent\(^2\), where Kupang and TTS increased by 20 per cent\(^3\) and 30 percent\(^4\) respectively. The mining sector also has the potential to provide employment opportunities. In 2008, the workforce was 71.16 per cent\(^5\) of the total population (68.51 per cent were employed while 2.65 per cent were unemployed). However, 33.64 per cent of the working populations were unpaid workers, and 66.15 per cent of them were female. Most of the workforce or around 71.83 per cent were unskilled labour who had completed primary school. Only 3.67 per cent of

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\(^1\) Friends of Earth Indonesia

\(^2\) from 3.66 to 4.47 million rupiahs

\(^3\) from 3.88 to 4.66 million rupiahs

\(^4\) from 3.05 to 3.96 millions rupiahs

\(^5\) (3,045,015 persons)
the population had tertiary education. In 2008, around 69.42 per cent of them worked in the agricultural sector, while less than 2 per cent were mining workers (BPS NTT 2009).

West Timor, which is part of NTT, is known as a deposit area for high quality manganese ore (45-70% of the ore contains manganese). Timor Tengah Selatan (TTS) and Kupang are two of four districts which have manganese mining activities. The area is generally poor and local people have traditionally derived a subsistence living from farming maize and cassava. Today, many farmers have begun to mine the land on an informal basis to earn additional cash. This mushrooming of informal mining activity has given rise to a debate in the local and national media on whether the mining is a boon or curse for the local people. Considering that 55 per cent of the population is Catholic, while Christians are 34.32 per cent, the anti-mining movement persuades Uskups (Catholic Church leaders) and Pendetas (Christians Church leaders) to support the anti-mining movement.

Legal complexity in property rights has triggered social conflict among local people (Sarong 2010; Dore 2010) as well as conflict between local people and those who have the mining business licenses (IUPs) from the government. Legal complexity has increased illegal mining in West Timor. The Timorese Fellowship (Persehatian Orang Timor-POT) of NTT reported illegal mining cases in West Timor to government authorities. The POT argues that of 399 mining business license holders, only 98 have both the exploitation and exploration license, while only 1 has special operation license (Seo 2010). Furthermore, legal complexity has created legal uncertainty. Neither Ministerial Regulation No. 34 of 2009 (PerMen 34/2009) on Domestic Market Obligation nor Government Regulation (GR) No. 23 of 2010 (PP 23/2010) on Mining Business Activities set out the new minimum pricing structure for sale of coal and other minerals or how these will be set in practice (Latul & Tjahjono 2009). This system let the local people sell the ore at a low price to the broker or to the wholesaler at around USD 0.5 – USD 2 per kilograms (Kuswardono 2009; Ama 2010; Sarong 2010; Oey 2010), while the price could be US$ 3-4 per kilograms in the international market (Suryanto 2011). The mining mafia also set up the price for their benefits (Febi 2010).

Forum Academia NTT (FAN) and also local NGOs and CSOs such as Yayasan Pancaran Kasih (YPK), Forum Masyarakat Peduli Pembangunan Daerah (FMP2D) also have initiated discussion with local government which highlights the poor political, administrative and state capacities, as well as alternative solutions such as a moratorium, imposing local government regulations (PERDAs), and CBRM &Co-Management of manganese mining. Meanwhile, both mainstream media (newspapers such as Kupang Post and Timor Express, radio and television) and online media (such as FAN mailing lists) have played a significant role in providing information, increasing environmental awareness and promoting public debate on the issue of mining in West Timor, including the uncertainty of regulations and the social, economic, political and environmental impacts of manganese mining activities.

Figure 1 Mama Debora and her fellow miners

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6 Issued by the Minister of Energy and Mineral Resource (MoEMR)
Figure 2 An artisanal miner with his *linggis* (an iron stick)

Figure 3 Abandoned mining area in Oehala protected forest
1.2 Research question

Main Research Project question is:

To what extent and how are local peasants benefiting from the manganese mining in West Timor?

The subsidiary research questions are:

- What are the constraints and opportunities faced by the artisanal-small scale miners in manganese mining in West Timor?
- What are the potential policy recommendations to address this issue?

1.3 Rationale for the research

This research is conducted on the basis of certain rationales, which are: to increase knowledge and perception of the impacts of manganese mining in West Timor; to generate recommendations for policy maker related to the issue; and to increase research skills and experience of the researcher.

The benefits of the proposed research are expected to flow to participating local communities; academia community, NGOs, policy makers, and the researcher.

1.4 Structure of the report

This report is presented in six chapters. The first chapter introduces the statement of the problem, questions, objectives and rationales of the research. The second chapter highlights the literatures reviews and theoretical frameworks for this research, including agrarian transition, OBAMAs phenomenon, property rights and commodity chain, informality and marginalization of ASM and integrated approach in ASM policy. The third chapter presents the research methodology, including site selection, method for data collection and selection of respondents. The results and key findings are presented in fourth chapter and discussed in the fifth chapter while the conclusion and recommendations are provided in the last chapter.
Chapter 2 Literature Review & Theoretical Frameworks

‘As a sector, ASM has often been marginalized geographically and politically, and a key question today is whether this situation is changing’ (D’Souza 2005, p. 101)

2.1 Informality and marginalization of Artisanal and small-scale mining (ASM)

Internationally, there is lack of agreed definition of artisanal and small-scale mining (D’Souza 2005). However, there are country-specific definitions which reflect local circumstances and development context (Ali 1986, Ghose 1994, cited in D’Souza 2005, p. 95). In Indonesia, artisanal miners refers to those who conduct mining manually, using low-technology, in small scale, usually works as individuals or kinship group, and often considered illegal or informal (D’Souza 2000, 2002, cited in D’Souza 2005, p95). Meanwhile, small-scale miners refer to those who ‘have some degree of mechanization, have legal license and/or are organized in some form of mining workers’ group D’Souza 2005, p95). The acronym ASM has been using by most people in discussing the sector collectively which is practiced in the poorest and most remote rural areas and its characterised by people who are highly mobile, poorly educated and who have lack of employment alternatives (MMSD 2002, cited in D’Souza 2005, p95)

The key characteristic of ASM includes: labour-intensive; semi-skilled or unskilled workforce; lack of mechanization; low productivity, low production levels; low income; mostly unregulated, informal and illegal, usually undertaken in conjunction with other livelihood activity (farming); seasonal; poor health and safety standard; involve women and child labour; and environmentally degrading (D’Souza 2005, p97).

The term ‘informal’ refers to what Geertz (1963, cited in Evers & Mehmet 1994) defines ‘oriental, involute, informal’ economy sector as unorganised, underdevelop and stagnant. The Asian development Bank (ADB2010, p. 1) notes that ‘the informal sector is comprised of (i) households with at least some market production; and (ii) production units with low levels of organization and technology, and with unclear distinction between labour and capital or between household and production operations’.

Informal mining is part of Indonesia’s economic sector and has been passed from one generation to another. Aspinal (2001, p. 6) highlights that ASM in Indonesia operate through several ways: ‘1) KUDs - are local village cooperatives operating locally with local permits; 2) Peoples Mining - are ASM operators who work under a permit, or who as a group are allowed to mine; 3) Traditional miners - are villagers who mine on a casual basis; 4) Illegal miners (PETI) who have no permits and operate within mineral tenures of legal companies’.

Hentschel et al. (2002, p.7) argue that ‘lack of political will to create an adequate framework for legalising ASM can be explained by personal interests related with the possibilities for corruption, money laundering, and similar illegal practices, enabled by the informal status of the ASM sub sector’, as can be seen in Figure 4.
ASM does only happen in Indonesia. The International Labour Organisation (ILO 1999) estimates that ASM activities have contributed between 15 and 20 per cent of the world’s non-fuel mineral production, and there are 13 million people engaged directly in ASM activities around the world. The artisanal small-scale miners are commonly from developing countries, where a further 80–100 million people are affected. In Indonesia, 109,000 people are registered as artisanal small-scale miners (Hentschel et al. 2002). However, many miners engaging in ASM activities in Indonesia are not registered.

2.2 Agrarian Transition, ASM and OBAMAs

Maize, cassava, paddy and sweet potatoes are the main agriculture products of NTT. TTS and Kupang districts are the main producers for West Timor (see Table 1). However, The Food and Nutrition Security Monitoring System (FNSMS 2009) points out that TTS district had the highest percentage of food insecure households (46%). West Timor is struggling with seasonal food consumption patterns, due to its prolonged dry season (8-9 months). This region is primarily dependent on rain-fed agriculture and has suffered from the annual famine season (Basu & Wong 2009).

The growing existence of OBAMA is an example of the popularity of manganese mining as a prosperous type of livelihood. OBAMA is an acronym in Bahasa Indonesia which stands for Ojek bawa mangan, a motorcyclist who provides a manganese courier service. Ojek is an alternative livelihood for the local people, particularly men. Many sell their agricultural
land to buy a motorcycle by credit which then they use as a taxi or delivery service to earn cash. Involvement of the OBAMAs in the mining supply chain has been triggered by the government regulation which banned the outflow of manganese ore to other areas/countries.

Table 1 Agricultural harvested area and production in 2008

<table>
<thead>
<tr>
<th>Agricultural Products</th>
<th>TTS District</th>
<th>Kupang District</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Harvested Area (ha)</td>
<td>Production (ton)</td>
</tr>
<tr>
<td>Paddy</td>
<td>278</td>
<td>345</td>
</tr>
<tr>
<td>Maize</td>
<td>63,319</td>
<td>157,411</td>
</tr>
<tr>
<td>Cassava</td>
<td>27,679</td>
<td>292,512</td>
</tr>
<tr>
<td>Sweet potatoes</td>
<td>3,699</td>
<td>29,544</td>
</tr>
</tbody>
</table>

Source: Statistic of NTT 2009, NTT in Figures, BPS NTT, Kupang.

The manganese ore deposit in West Timor contains high quality manganese ore (45%-70% manganese) which can be found at the surface\(^7\). Many local peasants have left their former livelihood and being turned to mining to earn cash for food. These artisanal-small scale miners have limited use of mechanized equipment, insufficient environmental and poor health and safety awareness.

Rigg (2005, p. 2) emphasises that transition in agriculture involves frisson, which is term ‘to encapsulate those environmental, social, cultural and economic tensions that arise when establishes system of production, consumption, reproduction and relation are challenged’. Given the existing poverty, food insecurity and drought season issue, conversion from agriculture to mining will have a negative impact on food insecurity in West Timor. However, the frisson that take place in West Timor should be recognised in the context of local peasants who engage in ASM as part of their resilience to poverty and livelihood challenges and opportunities.

Bryceson (1996, 1997a, 1997b 2002) argues that a reorientation of livelihoods from agrarian to non-agrarian (deagrarianisation) is required since revitalization of agriculture per se cannot overcome poverty issue in rural areas. However, peasants will be more vulnerable to poverty when they lose their land, which usually provides their basic needs, and leads them to depend on wage labouring or unfavourable tenancy arrangement (Rigg 2005). Since legal uncertainty in ASM is high, converting agricultural land to mining as well as selling the land to other parties leads to weakened local peasant ability to overcome poverty and food insecurity. Many of the OBAMAs cannot payback the loans on their

\(^7\) compare with manganese ore in Flores which have to be found at around 15m depth, and contain 30-40% manganese.
motorcycles. Then they lose both their land and their ‘tools’ to take opportunities in the mining supply chain.

2.3 Property rights vis a vis access to commodity chain in natural resource management

In the framework of environmental economics and policy, the consumers and producers behaviours heavily affected by the property rights which govern environmental resources. ‘Property right refers to a bundle of entitlements defining the owner’s rights, privileges, and limitation for use of the resource’ (Tietenberg 2007. P. 60).

Economic benefits are the critical factor in the development of rural communities, alleviation of property, and the fulfilment of human basic needs (Baikie 1985; Deere and deJanvry 1984; Dasgupta 1993; Dreze and Sen 1989, cited in Ribot 2005, p.2). However, most rural communities who are resource-dependent people have usually been marginalized in their access to natural resources which means they get little economic benefit from the exploitation of the resources. Thus, Ribot (2005) highlights the importance of policy intervention to ensure that these affected communities can have greater share of the wealth from the commodity.

There is a critical difference between rights and access. Rights is prescriptive term, which refers to accepted claim that supported by society through law, custom or convention while access is a descriptive term which go beyond rights, and its depend on the demonstration of fact with or without approval (Ribot 2005, p.16). Control is the ability to mediate other’s access (Rangan 1977, cited in (Ribot 2005, p.17). Hence, access analysis is empirical analysis which focuses on who has ‘the ability to obtain or make use of’ benefits and how (Ribot 2005, p.16-17).

Bryant and Bailey (1997) argue that environmental change is not a neutral process since it is closely related to the interplay among actors (political ecology) to maintain power over resources. Although the anti-mining movement promotes environmental awareness and ‘sustainability’, it has paid little attention to the livelihood issue of the informal miners who suffer from poverty and food insecurity. In contrast, the pro-mining actors, including local government and the private sector tend to favour economic growth while ignoring the social capital and environmental impact.

Harris-White (2003, cited in Ahmad 2008) argues that the traditional formal state has been used by the ‘shadow state’ which includes brokers, advisers, politicians and public servants, contractors who interact and often steer the formal authorities for their own profit. The fact that illegal mining still exists during the uncertainty of legal regulation on mining in West Timor indicates the existence of the ‘shadow state’.

Escobar (2006) notes that although corporations and governments tend to marginalized local people in the negotiation of livelihoods, communities have resistance and resilience strategies to cope with the transition and modernity, where resource conflict is a response to neo-liberal globalisation.

The framework of legitimacy and rights over natural resources has forced communities to fight for their rights over natural resources. The increasing demands on natural resources,
shifts in population and continuing exclusions of communities has exaggerated the process of reclaiming or resistance to the state and foreign corporations (Lahiri-Dutt 2006). Furthermore, the Human Rights Council (2010) highlights the necessity to elaborate a new international human rights instrument which recognises new rights of peasants such as the rights to land, to seeds and to the means of production.

However, Ribot (2005) argues that inequity of benefits distribution will not be addressed effectively by the enforcement of property rights per se since it involves a market hierarchy in which commodity chains play important roles. ‘A commodity chain is a series of interlinked exchanges through which a commodity and its constituents pass: extraction, production, transformation, transport, distribution, wholesale, retail and end use’ (Ribot 2005, p.5). Although realising that commodities may move through networks between extraction and end use (multi-stranded), argues that the use of a chain in an acceptable simplification since the paths of the commodity movements from end to end can be described as a chain (Ribot 2005).

Mapping the access along a commodity chain analysis includes: 1) identification of market actors; 2) evaluation of vertical income and profit; 3) evaluation of the horizontal distribution of income and profit; 4) mapping of how access is maintained and controlled (Ribot 2005).

Since manganese is classified as a vital mining product, it requires central government authority to regulate. The Indonesia Environmental Protection and Management Law (UUPLH No. 32 of 2009) requires the implementation of Strategic Environmental Assessment (SEA) as a mandatory environmental management tool in Indonesia. Furthermore, Government Regulation (PP No. 15 of 2010) on the implementation of Spatial Planning and Management mandates the integration of SEA in long term development plan and medium term development plan (KLHS Indonesia 2009).

The Indonesian environmental protection law (UUPLH 32/2009), Chapter 15 Verse 2, notes that an SEA is required for policy which relates to: climate change; biodiversity damage/degradation/extinction; increasing intensity and area coverage of floods, landslide, drought and forest/land fires; the decreasing of natural resources' quality and quantity; increasing of forest/land area conversion; increasing number of poor people who are endangering the sustainability of their livelihood; and increasing of health and safety risks.

2.4 Integrated approach in sustainable mining management

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3 (bahan galian vital = galian B)  
9 (Undang Undang Perlindungan dan Pengelolaan Lingkungan Hidup-UUPLH)  
10 (Kajian Lingkungan Hidup Strategis-KLHS)  
11 (Peraturan Pemerintah-PP)  
12 (Rencana Pembangunan Jangka Panjang -RPJP)  
13 (Rencana Pembangunan Jangka Menengah -RPJM).

Sustainable mineral paradigm is about securing the balance between industry, government, environment, community and other stakeholders, which requires culture change and adequate communication among stakeholders (Petterson at al 2005).

Hobbs (2005, p. 24) highlights that ‘sustainable mining is to convert what has been described as the vicious cycle of extractive investments to a virtuous cycle where jobs are created, revenues collected and managed competently, incomes saved and reinvested, there are forward and backward economic linkages, diversification is encouraged and environmental and social impacts managed, and where poverty and unsustainability are replaced by prosperity and sustainability’.

The ASM sector must be recognized as a significant form of local livelihoods which has the potential to alleviate poverty and be a tool for sustainable development (Hentschel et al. 2002; Hentschel et al. 2003; Lahiri-Dutt 2004; World Bank 2005; Lahiri-Dutt 2008). Therefore, it requires a collective solution for environmental problems, networking and communication as well as fair-trade ASM product (Hentschel et al 2003).

It is necessary to build global partnerships to support ASM as part of the millennium development goals (MDGs). ‘Not only are the social consequences for disregarding ASM high, but the sector has the potential to provide substantial benefits to efforts focused on reducing poverty and stimulating economic growth which, in turn, could contribute significantly to political and economic stability’ (World Bank 2005, p.10).

Considering the complexities of ASM, Hentschel et al. (2002, p.30) suggest the main strategic objectives of governmental:

1) improve poverty alleviation through ASM: regional/local economic development coordinate efforts with governmental institution, miners, and CSOs to achieve sustainable contribution from ASM;

2) enhance business climate for legal ASM: enabling environment including regulatory adaptation, incentive for legal operation and legalisation, organisations/institutions establish extension services and promote service delivery towards ASM community and mineral-based industries;

3) stabilize macroeconomics (fiscal regimes): sustainable management of mining taxation revenues promotes opportunity for adding value to mineral production in the country/province/district avoids black market; and

4) ensure sustainable mining: environmental and occupational health management to mitigate risk to the poor – good mining practices (GMP).

Unregulated mining ASM and exploitative state-controlled mining in developing countries have led to environmental degradation (MMSD 2002). Since ‘greed and fear’ are the only
two emotions of an equity market, Richards (2005) suggest that it is important to regulate ASM and to encourage ‘green’ revenues and fair price.

Fair price in this context is the price of commodity which includes the environmental and social cost. Internalisation of environmental and social cost to the commodity sale price will required advocacy for the investors and consumers in developed world. However, Crowson (2002) argues that mining companies are not part of a philanthropic industry and investors expect reasonable rates of return.

Unequality of power relations manifest themselves at both the material and the relational/symbolic level. More powerful actors control the wages benefits, services and opportunities available to people in poverty. They also have the power to construct ‘the poor’ through words, images and deeds (Lister 2004, p. 178, cited in Greig et al 2007, p 27).

In the case of ASM in Mongolia, Purevjav (2011) suggests that instead of banning the ASM due to lack of regulation and environmental and health concerns, the government should consider ASM as a rural livelihood strategy for poverty eradication. Hence, the government needs to regulate and reform informal mining by offering skills training and increasing the capacity of those involved in ASM, particularly women.

Amarasinghe (1999) highlights that production and marketing is the main issue in ASM of gemstone in Sri Lanka. Production issues include difficulties in obtaining permits as well as shortage of capital and investment, while the marketing issue related to low market price. Therefore, government intervention is necessary to increase efficiency in license/permits process, credit scheme for ASM, and price regulation.

Learn from agriculture sector which successfully increase the competitiveness of ‘organic’ products, Richard (2005) suggest that the mining industry can promote ‘green metal’ which are produced by certified mines and processing plants. Certification methods will enable branding to internalise the environmental and social cost while increase the comparative advantage of the mineral product. Sustainable business practice could increase company’s performance and comparative advantages, such as ‘customers and staff loyalty, product differentiation, resource efficiency, risk reduction, and innovation (IFC 2002, p. 72). The goal is to move from compliance with standard practices to innovative and leadership, from ‘target to best practice’ or from ‘paternalism to partnership’ (McMohan & Remmy 2001, MMSD 2002, cited in Richards 2005, p.31).

The questions are, how to ensure that the green revenues will be reinvested to the affected communities that return to the government in form of taxes and royalties and will not be misused by corrupt organisation and public officials, and how to avoid a situation where the profits are mostly enjoyed by the shareholders without reinvesting in community empowerment and poverty alleviation initiatives? (IFC 2000, Economist 2002, Newbold 2003, cited in Richards 2005) Therefore, good governance in all levels of the state (from central to village level) as well as corporate governance is important for ensuring sustainable mining practices.
Since ASM activities have a tendency to be informal and illegal, increased environmental regulation will be ineffective in their regulation. Therefore, governments need to develop adequate and easy-to-understand and enforceable legislation that will accommodate ASM sector into national program (McMohan et al 1999, Parson 1999, cited in D'Souza 2005). The legislation should provide simple environmental management guidelines that adopt working methods, health and safety standards, and minimize negative environmental impacts (Mutagwaba & hangi 19995, cited in D'Souza 2005). D’Souza (2005) highlights that the provision of environmental management guidelines that adopt local context and recognize informal mining has also been promoted by the United Nation Economic Commission for Africa (UNECA) and The UN Department for Economic and Social Affairs (UNDESA).

Collaboration between informal mining and corporations with the support of government is viable. Velez (2005) highlights the good practice of collaboration among Benguet Corporation, small-scale miners and the Philippines’ government. In 2002 the company launched The Acupan Contract Mining Project (ACMP) which enables a large-scale operator and small-scale miners to be grouped as mining cooperatives and work together legally. The company recognizes and empowers the informal miners by providing environmentally-friendly technical assistance as well as agrees to buy gold from the small-scale miners. The ASM community agrees to build a ‘symbiotic-mutualistic’ cooperation with the company, which is committed to health and safety, and protects the environment, while the government plays important role in regulation setting and enforcement.
Chapter 3 Research Methodology

3.1 Scope and method

Referring to similar research conducted in Indonesia and other developing countries, such as India, Nepal, Bangladesh, Sri Lanka and Mongolia (Lahiri-Dutt & Mahy 2007, Lahiri Dutt 2004, Lahiri-Dutt 2008, Purevjav 2011) this research uses a qualitative method.

This research was conducted in Timor Tengah Selatan (TTS) district and Kupang district in West Timor, Indonesia. The rationale behind the selection of these districts was the availability and reliability of access in consideration to the limited time of the research survey, as well as the characteristic of the district.

3.2 Context of the study site

West Timor is part of NTT province (See Figure 5). There is 1 municipal and 4 districts in West Timor. The research is focused on two districts, Kupang and TTS. NTT’s total land area is 47,350 km\(^2\)\(^{14}\) spread over 566 islands\(^{15}\). The total population of NTT was 4.5 million persons (1/50 of Indonesia, 1/5 of Australia), with population density around 95.76 persons/km\(^2\) (3x Australia)\(^{16}\).

<table>
<thead>
<tr>
<th></th>
<th>Total Area</th>
<th>Population</th>
<th>Population density</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Km(^2)</td>
<td>% of NTT</td>
<td>person</td>
</tr>
<tr>
<td>Kupang District</td>
<td>5,898</td>
<td>12.46</td>
<td>383.896</td>
</tr>
<tr>
<td>TTS Districts</td>
<td>3,947</td>
<td>8.34</td>
<td>417.942</td>
</tr>
<tr>
<td>NTT Province</td>
<td>47,350</td>
<td>100.00</td>
<td>4,534,319</td>
</tr>
</tbody>
</table>


\(^{14}\)Indonesia total area 1,910,931.32
\(^{15}\)42 inhabited islands.
\(^{16}\)Total population of Indonesia = 230 million, Australia 21.1 millions
Figure 5 Map of East Nusa Tenggara

Source: Statistic of NTT 2009, NTT in Figures, BPS NTT, Kupang.

Figure 6 Map of West Timor

Source: Statistic of NTT 2009, NTT in Figures, BPS NTT, Kupang.
Kupang district is located near (1 hour distance) to Kupang Municipality which is the capital of NTT (see Figure 6). Although most of the villages are poor, the level of literacy is higher than TTS. This district is drafting the local regulation on manganese mining (PERDA Mangan). The Head of District has temporarily banned mining activities. There are three village communities from three different districts which have been chosen as the target communities based on the socio and geographical characteristic of mining.

Meanwhile, TTS district is the second closest district to Kupang (2.5 hour distances) which is a mountainous area and the food producers. In this area, there is one company (Soe Makmur Resouces-SMR) which has a mining business license for exploitation. Prior to their operation, the company already made a MoU with the local government and the local leader which gave them the opportunity to set the price of the manganese ore at IDR 500 per kilograms. The OBAMAs phenomenon in this district is triggered by both community expectations for fair trade as well as business competition among companies, particularly those which only have exploration permits. From Kefa (TTU district) where they are located, these companies play role as cukong (buyers of illegal goods). These cukong offer higher price since they have no investment in mining operation and community empowerment. They also have shorter supply chains (Kefa-Belu-Surabaya-China/Korea) which lead to reduce cost for ‘pungli’ or illegal retributions. There are two village communities from two different districts which were chosen as the target communities based on the socio and geographical characteristic of mining.

3.3 Data Collection

This research uses two types of data, Primary and secondary.

3.3.1 Secondary data

The literature review focuses on ASM concepts, constraints and opportunities as well as recommendations for sustainable mining activities. This research uses secondary data from The Statistics Bureau and other relevant statistical data. Complementary statistical data and documentary reviews and analysis have been collected from the related institutions during the fieldwork.

3.3.1 Primary data

Since there is no significant research on the manganese mining in West Timor, primary data for this research relies on the fieldwork which has been conducted in July 2011 to collect data. In terms of research techniques, this fieldwork relied on semi-structured interviews and focus group discussion (FGD).

3.4 Participants and sampling
The quota sampling is used to get various types of participant (Babbie 2004). Initially the sampling target was 50 people, however in the end 58 people (see Figure 7). The participants comprised six groups (community, government, NGOs/CSOs, Academia, religious leader, and Media).

![Figure 7 Composition of participants involved in the interviews and FGD](image)

The participants were invited and informed about the purpose of the research. Both oral and written consents are used; depend on the typology of the respondents (some respondent are illiterate people). 57 interviews were recorded with the consent of the participant. Each participant was questioned using list of questions which vary among the group of respondents. The interviews were generally conducted in Bahasa Indonesia, except for the interview with the local miners and OBAMAs in TTS district which is conducted in Timorese native language (Dawan) with the assistance of an interpreter.

3.5 Data Analysis

Content analysis was used to analyse research findings in consideration to identify themes, concepts and categories (Burn 1998). Commodity chain analysis was used as a tool to analyse existing condition and alternative recommendation for policy intervention (Ribot 2005).

3.6 Research risk

The proposal went through the ANU Ethic Committee approval process.

3.6.1 Cultural and social considerations/sensitivities

**Vulnerability of participants**

Some participants are members of impoverished communities which are considered vulnerable. Initial access to communities was sought through introductions by referees to

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17 See appendix
these communities. The involvement of powerful actors and agencies with the research could make community members feel pressured into participate. However, there were processes (such as cross interview and FDG) in place to ensure this vulnerability did not compromise the voluntary nature of participation.

**Discomfort or embarrassment for participants**

Since this research focuses on local peasants, it was possible that interviews may raise sensitive or discomforting issues for participants. Questions which directly or indirectly pointed out some sensitive issues such as social marginalisation, poverty and ASM activities could have potentially made individuals uncomfortable and/or highlighted community segmentations and wealth disparities. Therefore, the questions were framed and delivered in the most appropriate verbal and nonverbal language.

**Interpretation assistance**

While the researcher spoke bahasa Indonesia, interpretation assistance was required when dealing with participants that speak in Timorese native languages (Dawan). To avoid subjectivity and conflict of interest, the interpreter was chosen from different sub-district and had no pre-existing relationships with people in these communities. The interpreter was required to keep the research confidential.

### 3.6.2 Other cultural/social considerations

**Anti-mining resistance**

Many local people believe that ASM is one of their alternative livelihoods. However, poor skills and limited mechanization has led to environmental degradations and loss of human life. This situation has led to increased support for the anti-mining movement.

**Political culture**

Since the research involves people from various political backgrounds and positions, interview questions have avoided direct correlation to political views. The interviewee was advised about the confidentiality issue.

**Trust**

Since Timorese people have a sense of sisterhood/brotherhood, being born and having grown up in Kupang, West Timor was a benefit for the researcher because the Timorese are more open to people who can speak Bahasa Indonesia with their dialect and understand their culture.

**Religious value and influence**

It is important to respect Catholic and Christian values and their influences among people in NTT. Therefore, it is important to obtain church leaders’ perspectives in manganese mining.

**Seniority**
Timorese people highly value age and social position. Hence, permission from the village leader was sought before conducting the research.

**Figure 8 Interview with the village leader and peasants in Oeteta village**

**Figure 9 Interview with the church leader and peasants in Oeteta village**
3.7 Informed consent
Information sheets as well as written and oral consents were used in the interview process. The information sheet was used to give a brief description about the Research Project, the identity of the investigators and the related institution, participant rights and consent, the processes to protect confidentiality and other consents\textsuperscript{18}. For the interview with local communities, the researcher read out the Oral Consent Script before conducting the interview.

3.8 Confidentiality and data storage procedures
Dealing with informal mining issues, the researcher protected the confidentiality of participants, unless participants requested otherwise. Measures to protect confidentiality have been taken at all stages of the research process, data collection, storage, analysis and publication. Interviewees can elect the level of anonymity they desire, and pseudonyms have been used where full anonymity is elected\textsuperscript{19}. As per ANU guidelines, any audio has been stored on hardware and will be locked in a cabinet for five years after any publication arising from the research.

3.9 Incentives and feedback
The researcher clearly emphasised that no direct payments will be made to individuals or participating communities. The result of the research will be disseminated and feedback sought through the two mechanisms: Provision of a summary report which can be requested by individuals/agencies\textsuperscript{20}, and ongoing communication with the local contact person who mediates the flow of information from researcher to the participant, particularly community participants, and vice versa.

\textsuperscript{18} see Confidentiality and the Oral Consent Script attached
\textsuperscript{19} see Consent Script/Form attached
\textsuperscript{20} see the consent script/ written consent form/ information sheet
Chapter 4 Results

*Monit anma’a*, those who plan their own disaster will suffer from it\(^{21}\).

4.1 Key Findings

There are five key findings:

1. Although the local governments have discourage the ASM activities through Moratorium policy and license mechanism, the ASM activities keep going on due to poverty issue, harvest failure and high market demand of the ore.

2. Most respondents highlight that local peasants have experienced economic benefits to some extent. (Although the benefits are distributed unevenly).

3. Legal uncertainty and unregulated market price as well as poor capacity of ASM practitioners have led to unsustainable mining practices which led to environmental degradation, health and safety issues, as well as social insecurity (child labour, ‘double burden’ for women, social unrest).

4. Most of the actors who benefitted the most from the commodity chain are those who have access instead of rights. The *cukongs* do not conduct mining activities, they prefer to be brokers and traders. They bought the manganese from the local people using truckers and OBAMAs as their intermediaries.

5. Legalisation of ASM, fair trade, and joint management are considered as potential alternative solutions since the Moratorium policy has failed to reduce the ongoing unsustainable mining practices and illegal manganese trading.

4.2 Commodity chain

4.2.1 Market actors and labour process

Market actors in the targeted communities of this research were identified from six types of production based on type of land (property rights): own land, own lease land, company lease land, creek and protected areas (see Figure 11).

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\(^{21}\) Cited from the interview with Daniel Taneo, one of the Timorese leader, a former parliamentary members of TTS.
Figure 12 presents the market actors in the mining of manganese in West Timor, in which the long supply chain has supported the existence of intermediary actors (brokers, transporters, OBAMAs) to have control over miners. The absence of a government policy on manganese pricing system and legalisation of ASM has also created unequal distribution of benefits which has made the artisanal miners worse-off.

This mapping is derived from fieldwork observation and interviews in July 2011.
Figure 13 shows the typology of domestic commodity chain (from village level to national level). *Cukong* is Indonesian term for trader who bought illegal goods from the brokers or other illegal traders. Many of the cukong who bought manganese ore from the OBAMAs are from the neighbouring district (TTU).

**Figure 13 Typology of commodity chain (domestic)**

<table>
<thead>
<tr>
<th>Type 1</th>
<th>Type 2</th>
<th>Type 3</th>
<th>Type 4</th>
</tr>
</thead>
<tbody>
<tr>
<td>Miners</td>
<td>Miners</td>
<td>Miners</td>
<td>Miners</td>
</tr>
<tr>
<td>Landowners</td>
<td>OBAMAs / broker</td>
<td>Mining company</td>
<td>Landlord</td>
</tr>
<tr>
<td>OBAMAs / broker</td>
<td><em>Cukong</em></td>
<td><em>Cukong</em></td>
<td>Mining company</td>
</tr>
<tr>
<td><em>Cukong</em></td>
<td>Exporter</td>
<td>Exporter</td>
<td>Exporter</td>
</tr>
</tbody>
</table>

*This chart is derived from fieldwork observation and interviews in July 2011*

Most of the mining company that have business mining licenses (IUPs) for exploration have played roles as buyers/traders of the ore instead of conducting exploration. They are upset with the fact that only one company has the IUP exploitation based on the previous mining regulation of 1967 while their local government has postpone the issue of new IUPs until there is a new ministerial regulation on mining area. Since then, these companies have moved from TTS to TTU and conducting their manganese trading on ‘their own way’, funded the OBAMAs to buy motorcycles and being their transporters and brokers to deal directly with the local miners who are also upset with the monopsony (a condition where there is only a single buyer) price.

### 4.2.2 Vertical benefit distribution

Ribot (2005, p. 8) notes that ‘profit distribution requires the systematic collecting of purchase and sale price and expense data overtime at each level of market. The profit margin is derived by calculating the per unit prices minus the per unit expenses at each level of the market’. In his research, Ribot made a year extensive interviews and participant observation. However, due to time, budget and data availability constraints, the analysis for this Research Project was limited to the sale price per unit of the manganese ore (IDR/kg).

The international price for the manganese ore is around USD 3-4, or around IDR 35,000. The benefit distribution per each kilogram of manganese ore is presented in Figure 14. The vertical income and profit distribution will be larger since the profit for each kilogram will
be multiplied by the volume of purchase. Figure 13 indicates that local actors (miners, landlords, OBAMAs) receive only 6.25 per cent of sale price.

**Figure 14 Vertical benefit distribution (per unit sale price of manganese ore)**

This chart is derived from fieldwork observation and interviews in July 2011

### 4.2.2 Horizontal benefit distribution

Estimation of profit distribution at each level is ‘much more difficult than estimating the average profit, it requires assessing the distribution of market shares. The total profit per actor is then derived by multiplying the quantity controlled by the profit margin at their level of the market Ribot (2005, p. 9).

Miners usually work as a group based on kinship with daily production around 20-200 kg. However, the prices vary among villages as it depends on their rights (legal/custom property rights) and access to the commodity chain. Interview with the local communities reveals that miners who have access to protected forest and industrial plantation forest (HTI) areas have a higher income than artisanal miners in other villages which conducted ASM activities on their own lands (Table 3). Since the HTI area is still considered as contested land\(^ {22} \), the local community conducted ASM activities in the forest until the government temporarily banned manganese mining activities in Kupang district.

Meanwhile, although people in Supul have their rights over the land, they have to sell their products to a mining company which has IUP for exploration and exploitation of manganese ore in Supul. The consensus among the company, local leaders and the local governments has given the company a control over the manganese price which has been set at IDR 500/kg. This monopsony practice has led to increase social unrest\(^ {23} \) and triggered the mushrooming of OBAMAs. OBAMAs buy the ore from the miners at around IDR 1000 – IDR 1500 (twice than SMR’s price) and sell it at around IDR1500 – IDR 2250 in neighbouring districts. In Supul Village (TTS) there are independent miners who collected manganese ore from a mining company waste soil with daily production around 9 kg. The

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\(^{22}\) The plantation is own by the state or company who has logging concession, but that land still a contested land. It used to be an open access area before the HTI initiative taken place.

\(^{23}\) See fieldwork report.

interview in Supul also noted that a loader wage is IDR 10,000 per tons of manganese loaded to the truck or around IDR 100 per kg.

Table 3 Manganese sale price variation at village level and the income distribution

<table>
<thead>
<tr>
<th>No</th>
<th>Village</th>
<th>Type of land</th>
<th>Daily production</th>
<th>Price</th>
<th>Average Weekly income</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Oelnoni, Kupang</td>
<td>own land</td>
<td>50 -150</td>
<td>800</td>
<td>500,000</td>
</tr>
<tr>
<td>2</td>
<td>Oeteta, Kupang</td>
<td>Industrial plantation forest</td>
<td>50 - 200</td>
<td>1200</td>
<td>1000,000</td>
</tr>
<tr>
<td>3</td>
<td>Oebola, Kupang</td>
<td>Own land and forest</td>
<td>30-40</td>
<td>1400</td>
<td>400,000</td>
</tr>
<tr>
<td>4</td>
<td>Supul, TTS</td>
<td>a. Own land</td>
<td>50</td>
<td>500</td>
<td>175,000</td>
</tr>
<tr>
<td></td>
<td></td>
<td>b. Own lease land</td>
<td>50</td>
<td>250</td>
<td>87,500</td>
</tr>
<tr>
<td></td>
<td></td>
<td>c. Company lease land</td>
<td>100-200</td>
<td>200</td>
<td>200,000</td>
</tr>
<tr>
<td></td>
<td></td>
<td>d. Mine waste land</td>
<td>8-10</td>
<td>500</td>
<td>25,000</td>
</tr>
<tr>
<td></td>
<td></td>
<td>e. Creek</td>
<td>50</td>
<td>500</td>
<td>175,000</td>
</tr>
<tr>
<td>5</td>
<td>Oehala, TTS</td>
<td>Protected forest</td>
<td>50</td>
<td>1000</td>
<td>175,000</td>
</tr>
</tbody>
</table>

* If 1 AU $ = Rp. 9000 (1 AUD = IDR 9000).

This table is derived from fieldwork observation and interviews in July 2011.

The typology of commodity benefits sharing are vary in village level.

1. Location: Oelnoni Village, Amarasi sub-district, Kupang District.

Although the ASM activities have stopped due to the Regent (Bupati)’s letter on the moratorium, the interviewees with the miners revealed that their products have sold to the brokers who had persuaded them with false information. They told them the manganese ore will cause thunderstorm during the rainy seasons and lightning would strike their traditional leaf-roof houses causing fires. Therefore, instead of waiting for the legal regulation, it would be better to sell their commodity as soon as possible. The sharing of commodity benefits sharing is presented in the following table and chart.
Table 4 Commodity benefit distribution in Oelnoni

<table>
<thead>
<tr>
<th>Actor</th>
<th>Miner</th>
<th>Landlord</th>
<th>Broker</th>
<th>Cukong</th>
<th>Exporter</th>
<th>Importer</th>
</tr>
</thead>
<tbody>
<tr>
<td>Price (IDR)/kg</td>
<td>800</td>
<td>200</td>
<td>500</td>
<td>8500</td>
<td>10000</td>
<td>15000</td>
</tr>
</tbody>
</table>

Figure 15 Commodity benefit distribution in Oelnoni

This chart is derived from fieldwork observation and interviews in July 2011

Table 5 Commodity benefit distribution in Oeteta

<table>
<thead>
<tr>
<th>Actor</th>
<th>Miner</th>
<th>Broker</th>
<th>Cukong</th>
<th>Exporter</th>
<th>Importer</th>
</tr>
</thead>
<tbody>
<tr>
<td>Price (IDR)/kg</td>
<td>1000</td>
<td>200</td>
<td>8800</td>
<td>10000</td>
<td>15000</td>
</tr>
</tbody>
</table>

Figure 16 Commodity benefit distribution in Oeteta

This chart is derived from fieldwork observation and interviews in July 2011

2. Location: Oeteta Village, Sulamu sub-district, Kupang District.

This area has no food insecurity issues as due to fertile agricultural land. However, manganese mining is an alternative livelihood to provide cash for their daily needs and improve their welfare. The ASM activities take place in industrial plantation forest which is considered contested land for the villagers. Some of the interviewees highlight that they
have received significant benefits from manganese ore and that they have refurbished their houses from leaf-roof houses to inc-roof houses with ceramic tiles flooring. In Oeteta, the ASM manager is a woman. Since the village leader informed the community about the health and safety impacts of the mining, women have encouraged their husband to use gloves and covers their mouth with masks or pieces of linen.

3. **Location: Oebola Dalam Village, Fatuleu sub-district, TTS District**

ASM activities are mostly conducted on private land and forest. The miners in this area have learned from a landslide incident which killed 4 villagers. Therefore, the miners adopt ‘gali-timbun’ or digging and reclamation method to avoid landslide.

**Table 6 Commodity benefit distribution in Oebola Dalam**

<table>
<thead>
<tr>
<th>Actor</th>
<th>Miner</th>
<th>Landlord</th>
<th>Broker</th>
<th>Cukong</th>
<th>Exporter</th>
<th>Importer</th>
</tr>
</thead>
<tbody>
<tr>
<td>Price (IDR/kg)</td>
<td>1000</td>
<td>400</td>
<td>500</td>
<td>8100</td>
<td>10000</td>
<td>15000</td>
</tr>
</tbody>
</table>

4. **Location: Supul Village, Amanuban Tengah sub-district, TTS District**

4.a. Own land

Since the price for the ore in Supul are has been set on preliminary agreement (MoU) among the company, local government and local leaders at the initial stage of the mining operation, all the product from this area have to be sold to the company at fixed price, IDR 500/kg. On their own land, the landowner and miners usually divided the benefit equally. Each of them received IDR 250/kg of the ore. However, if the landlords sell their product to the OBAMAs, they could double their profit. They sold the ore at IDR 1000/kg to the OBAMAs and OBAMAs then sold the ore to the Cukongs at IDR 1750/kg.
Table 7 Commodity benefit distribution in Supul_Type 1 (own land)

<table>
<thead>
<tr>
<th>Actor</th>
<th>Miner</th>
<th>Landlord</th>
<th>Obama</th>
<th>Cukong</th>
<th>Exporter</th>
<th>Importer</th>
</tr>
</thead>
<tbody>
<tr>
<td>Price (IDR)/kg</td>
<td>250</td>
<td>250</td>
<td>750</td>
<td>8750</td>
<td>10000</td>
<td>15000</td>
</tr>
</tbody>
</table>

Figure 18 Commodity benefit distribution in Supul_Type 1 (own land)

This chart is derived from fieldwork observation and interviews in July 2011

4.b Own lease land

Table 8 Commodity benefit distribution in Supul_Type 2 (own lease land)

<table>
<thead>
<tr>
<th>Actor</th>
<th>Miner</th>
<th>Obama</th>
<th>Cukong</th>
<th>Exporter</th>
<th>Importer</th>
</tr>
</thead>
<tbody>
<tr>
<td>Price (IDR)/kg</td>
<td>1000</td>
<td>750</td>
<td>8750</td>
<td>10000</td>
<td>15000</td>
</tr>
</tbody>
</table>

Figure 19 Commodity benefit distribution in Supul_Type 2 (own lease land)

This chart is derived from fieldwork observation and interviews in July 2011

4.c Company lease land (1)
Table 9 Commodity benefit distribution in Supul_Type 3a (company lease land)

<table>
<thead>
<tr>
<th>Actor</th>
<th>Miner</th>
<th>Company</th>
<th>Exporter</th>
<th>Importer</th>
</tr>
</thead>
<tbody>
<tr>
<td>Price (IDR)/kg</td>
<td>500</td>
<td>9500</td>
<td>10000</td>
<td>35000</td>
</tr>
</tbody>
</table>

Figure 20 Commodity benefit distribution in Supul_Type3a (company lease land)

This chart is derived from fieldwork observation and interviews in July 2011

4.d Company lease land (2)

Table 10 Commodity benefit distribution in Supul_Type3b (company lease land)

<table>
<thead>
<tr>
<th>Actor</th>
<th>Miners</th>
<th>Operator</th>
<th>Company</th>
<th>Exporter</th>
<th>Importer</th>
</tr>
</thead>
<tbody>
<tr>
<td>Price (IDR)/kg</td>
<td>200</td>
<td>200</td>
<td>9600</td>
<td>10000</td>
<td>15000</td>
</tr>
</tbody>
</table>

Figure 21 Commodity benefit distribution in Supul_Type3b (company lease land)

This chart is derived from fieldwork observation and interviews in July 2011

5. Location: Oehala Village, Fatuleu sub-district, TTS District

The ASM activities which conducted in the protected forest have been stopped after the government advocacy on the impact of illegal mining.

Table 11 Commodity benefit distribution in Oehala

<table>
<thead>
<tr>
<th>Series1, Miner, 500, 0.91%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Series1, Company, 9500, 17.27%</td>
</tr>
<tr>
<td>Series1, Importer, 35000, 63.64%</td>
</tr>
<tr>
<td>Series1, Exporter, 10000, 18.18%</td>
</tr>
<tr>
<td>Series1, Operator, 200, 0.57%</td>
</tr>
<tr>
<td>Series1, Importer, 15000, 27.43%</td>
</tr>
<tr>
<td>Series1, Miners, 200, 0.57%</td>
</tr>
<tr>
<td>Series1, Company, 9600, 27.43%</td>
</tr>
</tbody>
</table>
### 4.2.3 Mapping of how access is maintained and controlled

The actors play their roles based on their rights and access to the commodity chain through various mechanisms such legal permits/licenses, credit, knowledge, skills, and social networks (see Figure 23).

Mining company maintain their access through legal permits/licenses mechanism. However, some companies that have been granted IUPs for mining exploration misused their license to be buyers/traders (cukong) instead of conducting exploration. The uncertainty of new ministerial regulation on mining zoning has delayed the implementation of local government regulation which could provide new business mining licenses (IUPs) and people mining licenses (IPRs). This situation has provided opportunities for some players, such as cukong, brokers and OBAMAs to have access to the commodity chain. The cukongs, who ‘felt’ that they have been marginalized from legal mining operation since they cannot have IUPs exploitation due to the absence of new mining zone that in line with the new Mining Regulation Act 4 of 2009, maintained their access to the commodity chain by funding some brokers and OBAMAs.

The Regent of Kupang District has temporarily banned (put a moratorium on) mining activities until there is legal regulation on this issue. However, although this policy has reduced ASM activities in some areas, some peasants still conducting ASM activities to earn cash for their food and daily needs.

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**Figure 22 Commodity benefit distribution in Oehala**

<table>
<thead>
<tr>
<th>Actor</th>
<th>Miner</th>
<th>Broker</th>
<th>Cukong</th>
<th>Exporter</th>
<th>Importer</th>
</tr>
</thead>
<tbody>
<tr>
<td>Price (IDR)/kg</td>
<td>1000</td>
<td>500</td>
<td>8500</td>
<td>10000</td>
<td>15000</td>
</tr>
</tbody>
</table>

This chart is derived from fieldwork observation and interviews in July 2011

---

24 (since they cannot have IUPs exploitation due to the absence of new mining zone that in line with the new Mining Regulation Act 4 of 2009)
In TTS district, the mushrooming of manganese mining has started in 2008 (when the manganese deposit in Kupang being noticed to the public through media coverage). However, the lawmakers have still not issued adequate regulation for this issue. Meanwhile, miners who are disappointed with the pricing system prefer to sell their products to the OBAMAs. However, since OBAMAs considered part of illegal trading chain, the miners are prohibited to sell their product to the OBAMAs. As a result, many of these OBAMAs who are local peasants lost their alternative livelihood. It is difficult for them to do agriculture activities now, since most of their lands has acquired by the mining companies.

Some local peasants use violence to maintain their access. In Supul, there was an incident of social unrest in which some villagers blocked the road access to the mining area and
burnt the company truck as a protest to the monopsony situation and the company's failure to keep their commitment to the local people.

Meanwhile, some peasants have learnt a lesson from the landslides in some mining areas which killed some miners. Most of the landlords directly supervise ASM activities while miners avoid the tunnel system and adopt 'gali-timbun' (cut and refill) method.

4.3 Risks and benefits, constraints and opportunities of ASM in West Timor

4.3.1 Risks

The primary concerns of the interviewees are health and safety issues, livelihood transition, environmental degradation, social conflict, child labour, and food insecurity (see Figure 24, 25 & 26).

However, it is interesting that most of the artisanal miners who own their properties which they conduct mining activities argue that they have high interest and incentives to protect the environmental. As already mentioned, in Oebola, there was a case of landslide which killed 4 people. After the incident, the miners now are using the cut-and-fill method. Miners in Oelnoni and Oeteta also use the same method. However, only in Oeteta the miners use gloves and cover their mouth with linen.

4.3.2 Benefits

Most of the respondents highlighted that the mining activities have created an alternative livelihood for the local people, although they realize that the benefits are too small compared to time and efforts that have been spent on mining activities (see Figure 26).

The significance of the economic benefits derived from ASM activities can be identified by the changes in their capacity to fund their basic needs such as food, water and sanitation, adequate housing and basic education. In this framework, the research reveals that not all miners have experienced significant changes due to equity issues in the distribution of benefits. In Supul, only the landowner and OBAMAs have increased their welfare (children are being educated, they owned better houses and motorcycles). While in Oeteta, most of the miners have refurbished their houses.

Although the local Government consider manganese mining as a source of income for developing the local economy, there are no tax revenues or formal retributions that can be derived from ASM due to its informality and the absence of local regulation on manganese mining. In addition, some respondents highlighted the lack of transparency on how much the formal mining contributes to PAD (local government income from domestic product).

Figure 24 Some elementary school students who are also miners in Supul
4.3.3 Constraints

Most respondents highlighted legal uncertainty and unfair price as the main constraints which lead to illegal trading (see Figure 27, 28, 29).

Poor knowledge as well as lack of skills and mechanised equipment are also considered constraints. However, some miners also argue that since they use traditional equipment, not big machinery, they did not cause massive destruction to the ecology.

Most of women labours in ASM highlighted that they are involved because it is part of their responsibilities to help their husband earn an income to meet family needs, particularly cash for food. However, interview with participants from other group (NGO, Government, Church and media) highlighted that ASM creates double burden for women (housekeeping, baby sitting and earning cash).
Figure 26 Risk and benefits experienced by peasants in ASM in West Timor

This chart is derived from fieldwork observation and interviews in July 2011

Figure 27 A woman labour is collecting manganese ore without gloves and mask

Figure 28 A woman labour with her 4-years-old daughter who is also a digger
4.3.4 Opportunities

The highly demand of the ore is considered as a potential opportunity for ASM. The low burden cost and the quality of the ore will create economic benefit if it is managed properly. Other opportunities includes legalisation of ASM which potentially lead to increase tax revenue if it is regulated; encourage capacity building for the local people; and better chances for ASM groups such as cooperative groups to have IPRs (see Figure 29).

Figure 29 Constraints and benefits faced by peasants in ASM in West Timor

This chart is derived from fieldwork observation and interviews in July 2011
4.4 Alternative policies and actions to empower local peasants in sustainable ASM

As presented in Figure 30, interviews with respondent revealed the need for immediate legal regulation to legalise ASM activities and regulate market pricing system (fair price). Coordination among sectors, monitoring as well as law enforcement are also important factors to ensure integrated management in manganese mining. A provincial level policy is required to overcome this issue since manganese is considered as one of the vital mining product which means that the utilization of this mineral is under national government authority. In the context of local autonomy in Indonesia, provincial government is the representative of the state to coordinate local government. Therefore, provincial level policy will be necessary to regulate mining sector in West Timor.

To ensuring the implementation of good mining practice (environmentally friendly, health and safety standard are applied, community is empowered, proper technical methods are adopted, it is vital to reduce the risks. Meanwhile, respondent, particularly from NGOs, Media and Academia groups highlights the importance of transparency in policy and decision making to encourage public engagement and ensure accountability of mining management.

Most of the respondents from the local communities support the implementation of community based natural resources management in manganese mining, while respondent from other group proposed joint management as a better solution to overcome the lack of community knowledge and capacity in mining sector. Moreover, ASM mineral added value by establishing smelter (refinery) in district level is expected to increase the comparative advantages of this commodity.
Chapter 5 Discussion

The current uncontrolled manganese mining activities in West Timor has provided economic benefits for those who have access or ability to derived benefits from the commodity chain. The legal uncertainty has promoted illegal trading and poor mining management which has increased environmental degradation and social cost. However, involvement of local peasants in artisanal and small-scale mining (ASM) is what Rigg (2005) refers as a frisson in which express local resilience to poverty and livelihood challenges and opportunities.

The phenomenon ASM and OBAMAs in West Timor reflects the transition of wealth and poverty measurement from agrarian to non-agrarian resources and consumption of goods as suggest by Bryceson (1996, 1997a, 1997b 2002. However, this transition has increased peasant’s vulnerability to poverty. Similarly with the agriculture transition in Laos when local peasants lose their land for subsistence agriculture, they become more dependent on wage labouring and become trapped in unfavourable tenancy arrangement (Rigg 2005). In the case of TTS, this situation is worse since there is unfair pricing due to monopsony and legal uncertainty, as well as food insecurity and natural disasters. Many peasants’ land has been aquired by SMR as lease land for mining, and peasants now works as diggers and loaders and have to sell their product to the company. The findings shows the unequal distribution of the benefits which weaken the ability of local peasants to overcome poverty and food insecurity. Furthermore, most OBAMAs have lost their opportunities in the mining supply chain.

Social conflict and illegal trading (OBAMA and cukong) are the symptoms of what Harris-White (2003, cited in Ahmad 2008) described as the ‘shadow state’ in which government failures to provide legal assurance and fair trade to support community livelihoods create a parallel governance structure. This finding is in line with the arguments of Escobar (2006) who argues that communities have resistance and resilience strategies to cope with the transitions and modernity. Resource conflict is only a phenomenon while informality and marginalisation of the local people by the government and the corporation in economy activities are the underlying causes. The incident of villagers burning the company’s truck in Supul indicates local resistance to the monopsony, and that violence is used as a mechanism to control and maintain access (Ribot 2005).

If it is managed sustainably, ASM have the potential to alleviate poverty in rural area (Hentschel et al. 2002; Hentschel et al. 2003; Lahiri-Dutt 2004; World Bank 2005; Lahiri-Dutt 2008). Sustainable management of ASM requires integrated and collective solution, which includes environmental networking and communication, and a fair-trade ASM products (Hentschel et al 2003, Richards 2005). Learning from ASM in Mongolia (Purevjav
2011), Srilanka (Amarasinghe 1999), and around the world (MMSD 2002, Hentschel et al. 2002), it is important to encourage legalisation of ASM activities and inclusion of ASM in the formal economy. Furthermore, learning from ASM in Africa (Mutagwaba & Hangi 1995, McMohun et al 1999, Parson 1999, cited in D’Souza 2005), shows that the local government should provide easy-to-understand good mining practice (GMP) guidelines that adopt working methods, health and safety standards, and minimization of negative environmental impacts that are relevant to the local context.

The alternative solutions suggested by respondents are already being considered internationally; fair price, green metal and green revenues (Richards 2005). What respondents called community empowerment are called green revenues by Richards (2005). However, since Indonesia, particularly the local government and corporations that are involved in the mining activities in West Timor, still face significant challenge in terms of good governance, it is difficult to ensure that the green revenues will be reinvested in community empowerment and poverty alleviation initiatives (IFC 2000, Economist 2002, Newbold 2003, cited in Richards 2005).

Manganese mining in NTT has been occuring for more than three years without proper regulation and law enforcement. This is a common situation faced by ASM around the world where there are lack of political willingness to provide proper framework for legalisation of ASM due to conflict of interest, ‘corruption, money laundering, and similar illegal practices, enabled by the informal status of the ASM sub sector’ (Hentschel et al. 2002, p.7).

Instead of letting the vicious cycle entrapping their vulnerable people, policy makers need to support sustainable mining which could convert the vicious cycle to ‘a virtuous cycle where jobs are created, revenues collected and managed competently, incomes saved and reinvested, there are forward and backward economic linkages, diversification is encouraged and environmental and social impacts managed, and where poverty and unsustainability are replaced by prosperity and sustainability’ (Hobbs 2005, p24).

The poverty alleviation agenda could be integrated with community empowerment through joint management in manganese mining. Considering the low overburden cost associated with mining surface manganese, collaboration among ASM and corporations is economically viable. Veles (2005) notes the good practice of collaboration among Benguet Corporation, small-scale miners and the Philippines’ government through The Acupan Contract Mining Project (ACMP). Some respondents highlighted the potential adoption of ‘foster father’ and PIR25 approaches from agriculture and forestry sector to the mining sector. However, some respondents also highlighted their bad experiences with such a co-management system with the government which ended up marginalising local people and limited their access to the forest. Therefore, it is important to ensure good governance on the joint management in which transparency and accountability are highly prioritised.

As a representative of the Central Government, the Provincial Government is mandated to coordinate district government. This provincial level policy is expected to contextualize the

25 See fieldwork report
national regulation into the local context. For instance, the current mining law (Act 4/2009) notes that only those who have a minimum 15 years mining experiences are eligible for IPRs. However, manganese mining is a new activity for the West Timor people and therefore, without adaptation to the local context, this mining regulation will marginalized local people and affect their rights and access to benefits from the mineral. The interviews with official from Local Mineral and Energy Office revealed that the local government of Kupang district will adjust the requirement for 15-years mining experiences requirement for IPR to become 15-years land ownership and management to provide better opportunities for people mining. If this idea is adopted in the local regulation, the ASM practitioners might have a better chance to obtain an IPRs. Furthermore, NTT is one of the provinces in Indonesia which has high number of cooperative groups (Kelompok Koperasi). This might be a potential way to mobilise and manage ASM activities in NTT.

Learning from Ribot (2005) mapping of commodity chain and social relations, the below policy intervention map was developed (see Figure 31).

Figure 31 Policy intervention map
Chapter 6 Conclusion and Recommendations

6.1 Conclusion

ASM of manganese is a potential alternative livelihood for the local people, although there is inequity issue in the distribution of benefits. On the other hand, ASM activities have caused environmental degradation, health and safety issues, food insecurity, social conflict, child labour, double burden for women, and social unrest.

Legal uncertainty, unregulated market price, and poor capacity of ASM practitioners are considered as the main constraints for sustainable mining of manganese in West Timor. The existence of the illegal trading of the manganese indicates that the commodity chains can be accessed by those who have no property rights or failed to gain the property in a legal way due to the absence of legal regulation and lack of law enforcement.

The Moratorium policy will be ineffective to reduce illegal mining and inefficient in term of implementation, due to some reason: difficult or costly to monitor since most of the mining site are in remote areas; the land is usually private or customary property; lack of legal regulation and enforcement; difficult to stop illegal mining when people are hungry (poverty and harvest failure); and high market demands for the ore which encourages illegal trading.

Hence, it is necessary to introduce an integrated approach and policies (a bundle of policies) to address multi-level issues relating to manganese mining. Policies should include the integration of the poverty alleviation agenda to the mining management policy, legalisation of ASM, fair trade, joint managements, fiscal management, as well as the implementation of strategic environmental assessment and good mining practices.

This research has increased my understanding of the complex policy context and that environmental issues and impacts are often symptoms of underlying causes such as economic and politic marginalisation.

Overall, sustainable management of ASM is a potential instrument for community empowerment and poverty reduction initiatives in West Timor, and for the economic development of NTT in general. Considering complexities of the problem, a bundle of policies which contains multi-level interventions are required.

6.2 Recommendations

Ensuring sustainable mining in West Timor requires an integrated approach which contains policies to address the multi-level issues, as follows:

1. At national level:
• Introduce new mining zone which refers to current mining law
• Enhance coordination among related ministries (trading and commerce to stabilise fiscal regime and encourage fair trade (including added value of the manganese).
• Integration of poverty reduction initiatives with ASM management

2. At provincial level:
• Introduce provincial license mechanism that legalises ASM. Provincial policy on mineral mining is necessary since the ASM activities are not limited in Kupang and TTS districts but also in other areas in West Timor (TTU, Belu), Sumba and Flores.
• Conduct strategic environmental assessment (SEA) on the provincial policy draft to consider the environmental and socio-economic implications of a policy for licensing artisanal small-scale mining (ASM), provide information for the NTT Government’s decisions on the policy as well as to provide opportunities for stakeholders’ participation in the policy decision-making. The public consultation strategy in the SEA will be in three stages: screening, scoping and review.

3. At district level:
• Provision of transparent licensing mechanism (IUPs and IPRs)
• Market regulation (pricing mechanism) that encourage fair trade and reduce illegal trading
• Local government (e.g. Dinas Pertambangan dan Energi, Bapedalda/BLHD and related SKPD) could provide technical assistances on good mining practices.
• Provision of appropriate and easy-to-understand and environmentally-friendly ASM guidelines for the artisanal miners.
• Encourage joint management between the private sector and the local people with the assistances and monitoring by the state. The joint management is expected to empower local people, support poverty alleviation program, increase local economic development, and encourage the implementation of good mining practices, fair trade, increase tax revenue, and support sustainable development.

4. At village level:
• Establish cooperative business groups (Kelompok Usaha Koperasi) to improve peasants’ financial capital, skills and opportunities to have people mining licenses (IPRs).
• Advocate and build the capacity of the miners with the assistance of Media, Academia, Churches leaders, NGOs/CSOs (such as improve their knowledge on health and safety issues and entrepreneurship, as well as their mining skills).

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