Informal Gold Mining and Miners: Work Characteristics, Property Rights, and Gold Trading Chains in Bombana District, Southeast Sulawesi, Indonesia

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1. General Overview of Gold Mining

The price of gold has increased fourfold from £310 per ounce in 1999 to £1,400 per ounce in 2010 (Febrianti, 2013). This has led to an upsurge in the production of gold, by both large scale and small scale mining, the latter being often referred to as Artisanal and Small-scale Mining or ASM. The United Nations Environment Program estimates that about 15 million people in less-developed countries are involved in mining gold. About 50 million people over the world engage in this activity and about 10 to 15 per cent of the total annual global gold production coming from small-scale miners.

Gold is relatively abundant in Indonesia to the extent that the island of Sumatra was known in ancient times by the Sanskrit name Swarnadwipa meaning Gold Island. The geographical area of gold in Indonesia starts from the tip of Sumatra island extending to Papua. Some of the gold deposits have been long exploited, and some are newly discovered and only recently exploited. Gold was mined by local communities or by Chinese immigrants such as at Montrado, West Kalimantan in 18th century. The gold was sold to traders from India, Arabia, and Europe who came, for example, to the western coast of Sumatra. Gold was one of the leading commodities in the 16th -18th century period. Control in the production and trade of gold had an impact on the expansion of political control of Minangkabau Kings up to Jambi and Indragiri (Dobbin, 1983). Because of the importance of gold in the 17th century, the VOC (Vereenigde Oost-
Indische Compagnie, Dutch East India company) tried to exploit gold mines in Salido, West Sumatra, and monopolize the gold trade from several places in West Sumatra, Montrado, West Kalimantan, and also from Gorontalo, North Sulawesi.

Figure 1. Location of ASM gold mining activity from mercury hotspots

Currently Indonesia is one of the ten largest gold production countries in the world. In 2012, Indonesia contributed about 4.4% of the total world gold production from mining companies. 43% of gold from Indonesia is exported to the United States, then to Japan and Germany. Half of the gold comes from the PT. Freeport mine, but less is known about the contribution of gold production produced by small scale mining and the total number of small gold miners.

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Figure 2. Countries producing gold, 2012.

There are no reliable figures about the total number of informal miners in Indonesia, not only for gold mining, but also for tin, diamond, and coal mining. It is impossible to see the annual production of gold production and the total number of the labour force of informal gold mining, due to the high mobility of informal miners. Generally, informal miners are illegal. Estimates of the total number of illegal miners vary substantially. One set of estimates puts the number of illegal mines in Indonesia at approximately 77,000 with around 465,000 workers (UN, 1996; ILO, 1999; Avila, 2000 in Hilson, 2002); whereas the Indonesia’s Central Bureau of Statistics (BPS), estimated there were 324,000 illegal miners working at various mines during 1997-2002 (Heriawan, 2004). Nevertheless this is about ten times the average number of formal mining employment in the same period (PricewaterhouseCooper, 2004). Generally, the collection of statistical data of informal miners is carried out during prolonged, and heated debates among bureaucrats, politicians, NGOs, intellectuals, and representatives of illegal miners’ associations. Unfortunately, there are no statistical data about the development of illegal miners from 2002 up to 2014. Collecting data about figures of informal gold miners is quite difficult, because their mobility is very high, moving from one place to another from village, sub-district, district, and province to another.

Informal mining has led to many governance issues, among others, definition, regulation, and its consequences. It has relates to problems concerning forest, land and water that have been impacted by informal mining activities and how departments and local government, related to forestry, land, and water tackle these problems. This study assesses the characteristics of informal gold miners, income household, work characterististics, use and adoption of technology, property rights and resource access, health and gender issues, and structure and function of the gold commodity chain in a case study gold mining area in Bombana district, located in south-east Sulawesi.
2. Informal Mining and its regulation

There are many terms related to informal mining in Indonesia such as ‘wild mining’ (Penambangan Liar), ‘mining without permission’ (Penambangan tanpa izin), ‘people’s mining’ (Penambangan Rakyat), and Wild mining (Penambangan Liar). These changes in terminology have gone hand in hand with the influence of civil society movements, especially Non-Governmental Organizations or NGOs, which questioned the validity of the Wild mining (Penambangan Liar) (Erman, 2004:15). They argued, the term Wild Mining could not be used for those who mine gold, tin or coal on a small-scale basis, and on their own land, and using traditional equipment. Therefore, a neutral term was proposed, namely Tambang Rakyat or Rakyat Menambang (peoples mining). The use of the term Tambang Rakyat has become common, thanks to the Indonesian NGOs’s efforts in their push for recognition of local rights and local customary law. The use of the terms requires a separate discussion. The term used in this report is informal mining, indicating that that mining activity done by local communities or migrants with marginal or small deposits, lack capital, labor intensive, poor access to market and support services (MMSD:2002:315). This is similar characteristics with other informal economic sector.

Informal mining (called people’s mining in Mining Law no. 11/1967) is defined as an excavation or mining activity carried out by the community, using simple equipment or technology to meet their basic needs of their life. More precisely mentioned in Article 2 of the Mining Law above mentioned: ". People mining is a mining of mineral deposits from all the groups a, b, c ... carried out by local people on a small scale or in mutual cooperation with a simple tool " The Mining Law no. 11/1967 gives attention only one article, namely the definitions of people’s mining. However, the large number of articles that give attention to the people’s mining, does not guarantee clauses can be operationalized, or translated directly into local regulations. Therefore, there are prolonged debates about the characteristics of miners and the use of technology that are highly contrasted with definitions given in articles of Mining Law no.11/1967.

After the Reform Era, Mining Law no.11/1967 was replaced with Mining Law on Mineral and Coal No.4/2009. The new Mining Law on minerals and coal has given greater attention to peoples’s mining, and includes 32 articles related to people’s mining. In general, small scale mining in the Mining Law of 2009 is described as an activity that seems no different from that made by a large-scale mining company. They are distinguished only by the extent of mining and the different investment arena. In Article 1 of Law no.4/2009 the mining area of individual miners is defined as between 2 to 5 ha., and a maximum of 25 ha. for mining done under a cooperative. The new law is basically not much different from the old Act. The result can be interpreted that artisanal mining activity is part of mining activity in general, of an activity involving investigation, exploration, exploitation up until the sale of the product. However, when
considered as mining communities, they have characteristics that are difficult to set up as a company.

To get a People's Mining Permit, the applicant must submit the terms of the administrative, technical and financial requirements to the local government. The requirements, as mentioned in Article 22 of the new Mining Law, are as follows:

1. It has secondary mineral reserves in the river and/or between the edge of the river;
2. It has primary metal or coal with a maximum depth of 25 (twenty five) feet; sediment terraces, flood plains, and the ancient river deposits;
3. It has a maximum area of 25 (twenty five) hectares.
4. The kind of mining commodity to be mined; and/or area or place where peoples's mining activities that have been done at least 15 (fifteen) years.2

In the Mining Law No. 4/2009, there is an attempt to provide greater opportunities for the public to join in efforts in the mining sector. However, changes in the political system, from centralization to decentralization of mining, and how the translation of the articles contained in the New Mining Law at the local level is an important issue that can not be ignored. During this time, local government policy related to mining became more focused on policy concerning legal and illegal issues, and less attention to the socio-cultural and economic aspects of the local community. The impact of the repressive actions of local government is less accommodating of the interests of local communities. These conditions have led to the emergence of a series of social protests against local governments (Erman, 2005, 2007).

Nevertheless, there are still many problems concerning peoples' mining licenses in Indonesia. These involve interpretation of the new Mining Law by local government, coupled with unclear licensing mechanisms, and a complicated bureaucracy which collides with the Regional Spatial Plan (Rencana Tata Ruang Wilayah), including the issue of Good Mining Practice (GMP). Determination of the Peoples's Mining Areas (WPR) by the regent or mayor in addition to considering aspects of the community, the environment and reserves, must be approved by local Parliament members who certainly have a variety of considerations. How to practice the People's Mining Permit, its translation, and public response to the licensing issues will be discussed in the case study of the people's mining in the District of Bombana.

3. The Study Area

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2 See: http://www.hukum-pertambangan.com/wilayah-pertambangan
The district (Regency) of Bombana is located in the southern part of the Southeast Sulawesi peninsula, and includes a number of small islands (outlined red in Figure 3). The north is bordered by Kolaka and South Konawe; the south by the Flores Sea and Strait Tiworo and to the west by the Gulf of Boni. The land area is almost 3,000 km². Its land and sea resources are more than enough for its population of 150,000. It was established in 2003. The Regency is divided into 22 sub-districts (Figure 4). The capital of SE Sulawesi is Kendari, indicated by the black star in Figure 3, whilst Rumbia, the capital of Bombana is 165 km SW of Kendari and indicated by the red dot.

Figure 3 Location of Bombana in Sulawesi
Unfortunately, public transportation connecting the city Rumbia and the surrounding area is still lacking. The most important transportation mode is motorcycle or car which are owned by better-off people. The shortage of public transportation is indeed ironic for Bombana district given the richness of the mining and agricultural sectors. Therefore, during the New Order regime, Bombana has been described as an isolated and underdeveloped region. The lack of public transportation can still be indicated as by 1:00 pm the last bus runs from Kendari to Rumbia. The shortage of public transportation has become one of the factors that hinder the movement of people from Bombana to Kendari or vice versa.

3.1 Population and Ethnic Groups.
The district of Bombana is sparsely populated, less than 110,000 people in 2007. The population jumped by 40% in mid-2008, as a result of the discovery of gold. The migrants from outside Bombana and Sulawesi came to mine or to do other economic activities indirectly in relation to gold mining in Rumbia. They are generally seasonal miners who came to Bombana, and then returned to their own villages. They are unregistered and are not regarded as being part of the local community.

The two largest ethnic groups living in Bombana are the Moronene people, an indigenous ethnic group in Southeast Sulawesi province; and the other is the Buginese, a group from various regions in South Sulawesi. The Buginese introduced the system of rice fields with irrigation to the Moronene people who were previously a nomadic tribe with a swidden (slash and burn)
agricultural system. In addition to the Moronene and Buginese people, there are also other ethnic groups from the island of Java and Bali as transmigrants settled at nine Satuan Pemukiman or SP (9 Residential Units) by government in subdistrict Rarowatu and North Rarowatu. The Buginese and the Moronene live together harmoniously, reflected in the division of political power between the Buginese or Moronene as regent and vice regent of Bombana district.

3.2 Gold: Mythology, its Discovery, and the history of Management of exploitation.

The Moronene people are familiar with gold in their daily vocabulary. The word of gold, in their mythology, refers to the name of a figure, his name is Lelebulaweng. It means gold is everywhere. The word for gold also refers to a gold horse found in Pinaka mountain. The Moronene people believe that every year there has to a ritual, giving feed to the gold horse. By conducting the ritual, they hope their villages will avoid danger.

This myth became a reality when Pak Budiarmi, a fourth-generation Bugis descent living in Poleang, discovered gold, sparking a gold panning boom. In mid 2008 in Bombana, Southeast Sulawesi, Gold nuggets were found by the local community in areas surrounding Tahi Ite. While this report was being written, a miner discovered gold-containing sands in the mountain. Shortly after its discovery, thousand of people came to Pinaka mountain to mine gold. The placer gold discovering in Tahi Ite River, Bombana was unusual, because it is not common in Indonesia to find gold deposit in the metamorphic rocks. This deposit is thought to be an orogenic gold deposit, because the study area is controlled by the intensive geological structures with the metamorphic rock as the host rock (Fadlin, 2011).

Initially, this mining was formalized by local governments with an entry card to the mine site. The government divided the location along the Tahi Ite River into lots for miners. However, when the environmental degradation (including use of contaminated river water to irrigate the rice fields of trans-migrants in Lantari Jaya) and inhuman working conditions was brought to the attention of legislators, the government attempted an artisanal miner’s moratorium. In fact, a moratorium never happened, and in 2009, there is a big change in management of gold mining exploitation in Bombana.

In 2009, the local government issued mining rights to mining companies, in the hope that principles of good mining practice became a reality. Until 2012, the local government issued 84 mining rights, 53 of them for gold mining companies with area of 100,000 hectares, along with 19 nickel companies, located in the sub-district Kabaeba, with an area of 222,820 hectares. The rest are for extraction of chromite and iron ore (Badan Lingkungan Hidup Kebersihan, Pertamanan dan Pemakaman, Kab. Bombana, 2012: Chapter III). Most of the private gold mining companies are located in sub-district Rarowatu and North Rarowatu. However the granting of these mining rights was the beginning of social conflicts between local communities and mining companies.
4. Two Cases of Informal Goldminers and Household Income

Two cases of informal gold miners are presented in this paper, to describe and understand their socio-cultural backgrounds, household income, work characteristics and use of technology in gold mining. The first miner is Pak Budiarman. He was the first to discover gold deposit in the river Tahi Ite. I travelled to the river on February 20, 2015, a section that can no longer be identified anymore, because the river is already covered a huge tailing of gold mine. Pak Budiarman is a Buginese fourth generation, and he is now living in Rau-Rau, sub-district Rarowatu. The second informant is Pak Ardin, a member of the Moronene community.

4.1 Case 1. Pak Budiarman

Socio-cultural Background

Pak Budiarman was born in the sub-district Poleang in 1970 and graduated from senior high school. He is now living in Rau-Rau (located about 20km SW of Rumbia), with his wife, a native Moronene. He has six children, the oldest one studying at university, the second and third one at senior and junior high school. The fourth and fifth children are at elementary school, and the youngest is two years old. Pak Budiarman does not want his children to follow him as a miner, because working at the mine is very heavy, and
dirty. The life is insecure— one is quickly rich and quickly poor. In his small and simple house in Rau-Rau, two family members from South Sulawesi live together with him. Pak Budiarmman recruited them to work at mine site owned by him. His mine site is located in the mining area of PT. Panca Logam Mulia, in Padang Bila.

Pak Budiarmman is the fourth generation of Buginese migrant. His great-grandfather came from Bone who had migrated to Poleang, Bombana in the colonial period. More than 75 percent of the population in this area is Buginese migrants. They have been migrating for a long time through a traditional port, Boepinang that is located at Bone Bay. This port has function to connect people from Bone and Moronene. Pak Budiarmman is one of the products of the past relationship between two regions. Although Pak Budiarmman is a Buginese, he felt as a part of the Moronenean people.

Before involved in mining, Pak Budiarmman had followed great-grandfather’s steps as a farmer. When he married a woman from Rau-Rau, he moved to the village. He sold all of his land legacies from his father in Poleang, and with the benefit of the sale around Rp. 30.000.000 (about US$ 2,500); he bought land again in Rau-Rau at a price Rp. 500.000 (US$41) per hectare. Thus he has 60 hectares land. With this land, Pak Budiarmman planted it with cash crops such as cacao. He has also rice-fields in order to survive.

History of Gold Discovery

In September 2008, Pak Budiarmman suddenly became famous as the discoverer of gold in Bombana. According to him, basically, he did not find the gold accidently as told in social media but through hard work, with his fourteenth work team that had started in January 2008. Since then, Pak Budiarmman and his team worked in the forest to look for gold deposits and collected a lot of sample rocks that were tested by a Bugis gold miner who had experience in gold mining in Manado.

Pak Budiarmman collected so many types of rock, that people around his residence regarded him as an insane man. In April 2008, Pak Budiarmman and his team crushed some rock, and by using mercury, he found gold 1 or 2 grams in the stone. One week later, at early morning, Pak Budiarmman accepted a guest who brought a map. He saw a word “Nederland” in the map. Although there was information about the location of gold deposits in the map, there was different information about the area, ranging widely from the Poleang, Boara, Boepinang, Bombana, Langkoala, to Pompageo. After seeing the map, Pak Budiarmman became more enthusiastic to find gold deposits.

In May and June 2008, Pak Budiarmman and his work team conducted excavations in some areas. He invited Sulaiman and two gold miners, all Buginese who were living in Timika to do panning for gold. Unfortunately, they were unsuccessful. But one day, two months later therefore sunset, after all team had gone home without getting results, Pak
Budiarmar and Sulaiman went back into the forest to pan for gold. On August 9, 2008, Pak Budiarmar went panning by himself, facing to south of the River Tahi Ite. This day he found gold. He showed it to Pak Sulaiman. Pak Sulaiman directly cried and fainted. Then ten days panning for gold with 14 members of work team, they reportedly produced 4.4 kg of gold. This is not exaggerated and someone might not believe in it as said by Pak Budiarmar. The deposit of gold is very rich at very beginning. He said that he panned 10 times in the River Tahi Ite, he got 28 gram. According to Pak Budiarmar, in 2008, he even sold 12 kg of gold to a trader obtained from simple panning. Pak Budiarmar informed the Regent of Bombana, Pak Atikurahman, that gold had been found in the forest but the Regent did not believe him. To prove it, Pak Budiarmar invited Haikal, the son of Regent of Bombana, to witness the stones containing gold at his house then, the next day, Pak Budiarmar and Haikal went to Jakarta to confirm the gold grades. Pak Budiarmar carried a box containing 8 ounces of gold as a sample. The result of test in the Sukopindo laboratory proved that the gold grades reached 98 percent..

The discovery of gold in Bombana had already spread everywhere so the day, when Budiarmar back to the village, the mine site was crowded with miners. This gold discovery later became in an uproar so that thousands of miners arrived within a few weeks. According to one estimate, the number of miners reached 60,000, not only from local communities but also migrants from various regions outside Bombana.

**Household income**

Pak Budiarmar's income of is mostly from mining. The profit from the first gold sale was about 400 million Rupiah, shared with members of the work team; Pak Budiarmar's share being 1 billion rupiah. He invested his money to buy land. Basically, based on his experience for approximately one year out looking for mine deposits, Budiarmar has built up a fairly good knowledge about the land that might contain gold. Therefore, he purchased about 600 hectares of land for mining located around the Tahi Ite River site.
From 2008 to 2010, Pak Budiarmam, the land owner, became a mining manager and he employing miners on his mining area. At the beginning, Pak Budiarmam bought a machine, and then handed it over to others to manage his mining area with a profit-sharing system. Pak Budiarmam received 20 percent of the total output each day. In one day, Budiarmam can earn 60 million Rupiah (US$6,350). During that time, he did not work rice fields and plantation.

The situation began to change when the local government changed the authority for mining to companies. Pak Budiarmam could no longer manage his land for artisanal mining since the mining companies have authority on all of the land area. Later, Pak Budiarmam had to make a deal with mining companies, with a profit-sharing system but only at 10 percent of gold production. The system is called partnership. Lastly, Pak Budiarmam received shares worth Rp. 1.5 billion (US$160,000) from PT. Tiran Indonesia. After that, Pak Budiarmam’s profit decreased dramatically along with the decrease in people’s mining in Bombana.

*Between Party and Capital Investment*

"Goodbye poverty", Pak Budiarmam said expressing his delight on finding abundant gold. However, Pak Budiarmam preferred to spend his profit in consumptive sector. In fact, Pak Budiarmam was very active from one party to another party, from one cafe to
another cafe in Bombana, Kendari and Jakarta. He said his life was not to step on the earth, because he went to Kendari, from Kendari to Makassar or to Jakarta and back to Bombana.

After getting a lot of profit from mining gold, Budiarmam suddenly became an important person, surrounded by many friends, women, as well as local elite. Budiarmam became seduced by city life. Even when he was rich, Budiarmam married eight times. However, as his income reduced, one by one, his wife and friends left him. Then he was back to the first wife and children.

Pak Budiarmam is one of the gold miners who received the most profit from gold mining before the mining companies established and occupied his land. But his money from mining gold was not invested optimally compared with amount of his income. Pak Budiarmam was spending his mining profit in nightlife and parties. In one night Pak Budiarmam and his friends claimed to have spent 250 million rupiah (US$26,500). His money went to the payment of Trio Macan Group a well-known musical group from Jakarta to perform three months in Bombana.

If Pak Budiarmam earns Rp. 400 million from the sale of gold, he bought land worth Rp. 100 million, with the remainder of the gold sales spent in partying and buying luxurious goods. The lifestyles of Pak Budiarmam became consumptive and out of control. He bought twelve expensive cars, booked a famous music group from Jakarta, Trio Macan that has perfomed for a month in Bombana. Twelve luxury cars were parked in front of his narrow and simple yard house. That house until now never been renovated. Pak Budiarmam assumes that he is not loser, he does not feel regret because he has bought the land.

According to Pak Budiarmam, basically, he has knowledge and experience in economic management, and how to become a businessman, but the influence of the gold sparkle made him forget himself. Pak Budiarmam realized that the land is an important asset to the investment in his future. Therefore, he still invests his profit in the land sector although it is relatively small compared to his mining profit and amount of profit that he spent in partying. Pak Budiarmam has invested in 600 hectares of land with an average price of Rp. 15 to 30 million (US$ 1,590-$3,180) per hectare. He even sold 1 hectare of his land for Rp.700 million to a businessman. The price is very high, but the businessman got benefit the land that produced 30 kg of gold. The amount of investment is very lower than the amount of income from abundant gold. Similarly, of the twelve cars purchased by Pak Budiarmam, all were re-sold. In addition, the value of his house is only Rp. 100 million (US$7,400). It proves that the amount of Budiarmam’s productive investment is much lower than the amount he spent in partying.
Back to Kebun (Agriculture)

As the money from gold mining decreased, and some of his friends and the eight of wives of Pak Budiarman began to leave him, Pak Budiarman began to re-think. He has been managing his land, by planting short-term crops, such as corn, and chili. He also began to work rice-fields. He also planted long-term crops such as tilapia, teak, cacao, cashew, and so forth.

According to him, the land is a future that should be maintained, while the gold is only temporary, and will be exhausted. Therefore, even though his investment on the land is relatively small compared with the profit obtained from mining, Although he still maintains some mining activity, Pak Budiarmam is setting store on agriculture as the future.

4.2 Case 2. Pak Ardin

Socio-cultural background

Pak Ardin was born in Rau-Rau village in 1972. His wife is from Watubangga village located in Kolaka. Ardin has four children, the oldest one in Junior High School, while the youngest one is in kindergarten. In addition to the nuclear family, two cousins with their two children are now staying together in his home, all of them under his responsibility.

His parent, grandmother and grandfather are farmers. His mother is a native woman of Moronene who lived in the village Rau-Rau. His father comes from Lakumea, an area outside Bombana. His mother was divorced when he was a teenager. He lived with his mother in a small house in poor condition. His house leaked, so that he could see the sky directly from inside the house. He dropped out from Elementary School, because his mother could not pay his school fee. When his mother died, he lived with his ‘other
parent’. Both his grandmothers and grandfathers and his parent are farmers. Since then, he had to work as wage labourer in cashew gardens, timber-cutting, and other jobs. He was eventually able to buy two hectares of land. He plants the land partly with cashew, and partly with paddy. The paddy fields can only be harvested once a year, and with the cashew, which is one of the famous crops in Bombana, he is able to feed his wife and children. After gold was discovered in 2008, he decided to try his hand at mining.

We met Pak Ardin on Friday, February 20th, 2015 at his home in the village of Rau Rau. Friday is a holiday for miners. Hence, Pak Ardin was in the house. The house is located on a main road, a permanent, conspicuous, and relatively luxurious compared to other houses on the road. It is quite large, built on a land area of 18 m x 150 m. The land located on the side and back of the house is planted with vegetables and other crops. According to Pak Ardin, vegetables and crops are sufficient to meet the daily needs for their family members.

There are two motorcycles parked on the porch. When we entered the house, we sat in an expensive large sofa, two big ceramics, bought by his wife, located at the corner of the guest room. In the other corner, toward the door, a big and expensive clock stands. Its price is more than 5 millions rupiah. In the family room there is TV with satellite reception. In the family room, there is a large cupboard, a place to put various household utensils. This room also has a refrigerator in that place, and it blends with the kitchen space.

**Being a gold miner**

When gold was discovered by Pak Budiarmar in Tahi Ite, Pak Ardin also joined the gold rush and started to mine for gold in 2008. He has mined gold for five years. During this time, he has no longer worked at growing food. As a result, production of cashew is not optimal, and his rain-fed rice is insufficient for fulfilling the basic needs of his family. Consequently, Pak Ardin buys rice which is not a major problem for him, if gold mining provides sufficient profit to feed family members and the people who are dependence on him.

**Household income**

Pak Ardin’s income is from mining gold. In the first years (2008-2009), he obtained 10 to 20 grams of gold powder for a month. He never reached an ounce of gold powder a day. Since partnering with PT. Tiram, his income averages the equivalent of 30 grams of gold per month, worth a minimum of 12 million rupiah (US$890). Since 2013, Pak Ardin has begun to work on his rice-fields and gardens planting clove trees and patchouli trees. Nevertheless, his main household income is still from mining gold. The production of paddy is only for family consumption, whereas his garden does not yet produce. He also pays three labourers to help him in the gardens, whereas his
mineworkers work on his rice-fields. His wife is focused on child care and domestic duties.

Pak Ardin does not want to mention his household expenses and the costs of education for his children per month. Education of children is most important to him. He does not want his son to drop out of school as he did himself. He also does not want his children to become miners, because such work is heavy and the outcome is uncertain. Initially, he enjoyed spending his money on a variety of entertainments. After advice from one of his friends, he began to save money obtained from the sale of gold; he build his home for 250 million rupiah (US$ 18,500), purchased 10 trommel machines at a price of 60 million rupiah (US$4,500) in cash from the mine equipment store in Rumbia, including the cost of installment. He also bought 10 hectares of land at various locations. He only owes 20 million rupiah (US$1,5000) to PT.Tiran, with an agreement and it will be repaid in gold. He refused to buy mining equipment on credit because the price discrepancy can reach three million rupiah. Purchasing land is important according to Pak Ardin, because the gold deposit can be exhausted, whereas agriculture has no limits.

*Picture 3 In front of Pak Ardin’s house (taken in February 2015)*

Pak Ardin’s case above shows us that there is no definite restriction between the profession as miners or farmers. The transition of work from farming to mining or vice versa is very common and it has had a long history in Indonesia. Indeed, there are rational choices for farmers or miners to prioritize source of income beneficial for them.
Pak Ardin’s case is not only found in the district of Bombana, but also in the tin and coal mining areas elsewhere in Indonesia.

**Access to mine and its work characteristics**

Entering the mine site for Pak Ardin is not easy, though he is a Moronene. He has to buy an entry permit card issued by the district head with intention to regulate and legalize people’s mining in Bombana. The normal price of the card is 100,000 rupiah. Nevertheless, Pak Ardin bought it at a price of 400,000 rupiah. This high price is still considered as usual for Pak Ardin, because many people buy the card at a price up to 1,500,000 million rupiah per card. Even many immigrants become hysterical, because they are unable to pay a very expensive card. With the entry card, Ardin has permission to mine. As with other miners, initially Ardin mined anywhere illegally, but then he made an agreement with the owner of the land. Pak Ardin learned to pan for gold from an immigrant. Pak Ardin only uses a frying pan and a crowbar. He bought a frying pan for 80,000 rupiah, and a crowbar at a price of 150,000 rupiah. Traditional mining tools are mostly sold by the Buginese traders for high prices at the mine site as demand outstrips supply in Bombana.

With regard to the entry permit card issued by the government there is abuse of power by certain people who are licensed to sell the card by the local government. The cards are scanned and forged copies made as done by Andi Nazir, a Bugis strongman migrant who has long been living in the area of Poleang. According to him, in one month, he gets a profit of 450 million rupiah (US$33,000) from the sale of such cards (Interview with Pak Andi Nazir, February 18, 2015). These forged cards indicate that mining activities of the people in Bombana may be mostly illegal.

He had panned for gold for one year to avoid the cost of using a trammel machine. Pak Ardin gained between 10 to 200 grams of gold powder a week and even he can get 30 grams (about 1 ounce) in one day, if he is lucky. The gold is sold to a buyer (collector) at the mine site. Pak Ardin earns 15 million rupiah for 100 grams of gold powder. According to Pak Ardin, panning for gold is much better, and can gain a lot of gold, if lucky, but however, his job is far heavier and his body is quickly tired.

In 2009 Pak Ardin stopped panning for gold, and began a cooperation with PT. Tiran, a gold mining company that had official permission to mine. He partnered with this company because he has 2 hectares of land located next to the site of the company. According to him, partnering with the mining company is far better, safer than panning for gold individually, although the benefits gained are much smaller. When he was panning for gold, many illegal levies had to be given to the army, police, and strongmen, but when with the company, mining is legal and secure, and the mine site is protected by the police. Working with the mine is much easier because the company uses a heavy equipment such as an excavator.
Pak Ardin likes all stages of the production process in the mining. Work experience ranges from panning, digging land with a crowbar, breaking rocks with trommel machine up to being foreman of the working group at his ground. Nevertheless, he thinks that the time will come when he has to stop mining gold, as he is getting older. To deal with this eventuality, he invested the money gained from mining to purchase land and to manage it seriously. He hopes that the results of planting patchouli and clove will be able to finance their children’s education and family life in the future.

5. Women in Informal Mining
Women’s direct participation in informal mining varies throughout the archipelago, depending on what is being mined and the technology used. In Bombana district, there are at least five categories of women based on their position in gold mining. The first category is women who have land and control over miners on their land. Most of them are locals. They have communal land (tanah ulayat) that is located now within company leases. To give some examples of these women are Bu Mahe and Bu Mantele who have their communal land located within PT. Lamora, whereas the communal land of Bu Marni and Bu Beke in the mining area of PT. Tiran and Bu Dewi’s land is in PT.Panca Logam’s mining area. All these women have the task, given by the companies to control mine workers who work in their mining area. The women get 10 % of the total production of gold, Which they will distribute to the benefit of extended family

Picture 4 Inside Pak Ardin’s house (taken in February 2015).
members who have communal land based on status of kinship relationship (Interview with Pak Sultan, Februari 19, 2015).

The second category is that of women traders who have foodstalls in the location or come to mine to sell food, drink and other basic necessities of the miners. The miners can get drinks such as coffee, tea and can enjoy noodles.

![Image of women at her place of stay and foodstalls in Padang Bila.](image)

*Picture 5 Women at her place of stay and foodstalls in Padang Bila.*

The third category is women who are involved in the process of production, panning for gold in the river or bringing ground mixed sand containing gold grains. Panning for gold in the river can be said as not heavy job and is done not only by men, but also by women and even children. There is no prohibition on women to pan for gold, even though mining is new occupation for them.
The fourth category is women who, as part of the miner group, provide food for male workers. They are paid similar with male workers. The women are recruited together with gold miners. Most of them are part of their extended family. The women can also pan for gold at tailing places, especially after cooking and providing foods for male miners. A common member of this category is a miner’s wife who accompanies her husband together with their children.

The fifth category involves women as entertainers or as prostitutes. According to interviews with some people working at the mine site most of them are from Tolaki, Palu, Manado, and even from West Java. Usually, the transaction between the prostitutes and the consumers (male miners) usually is gold.

There are no statistics available to describe the total number of women who are involved directly or indirectly in informal mining. Nevertheless, it can be said that role of women is very important in informal mining and especially in helping their own family to be survival.

6. Relationship between Miners and Farmers

The miners come from diverse backgrounds, most being farmers and fishermen who rely, for their livelihood, on agriculture, plantation, fisheries and the forest products, such as rattan and honey. The district of Bombana is a major rice producing area, providing food security for Southeast Sulawesi. The irrigated rice fields were created by Buginese migrants who have been living in the sub-district of Poleang for decades, and then by Javanese transmigrants who were resettled in Residential Unit (from SP 4 to SP 9) in sub-district Rarowatu and Lantari Jaya since the Suharto era. In addition to rice, this region also produces three famous leading agricultural commodities, such as, cashew, cacao, and coffee. Cashew from Bombana is the highest quality in Southeast Sulawesi. (Interview with Fahmi, February 23, 2015).
As already noted, Pak Budiarman, found gold in Bombana in 2008 triggering a gold rush, and an influx of migrants from outside Bombana and Sulawesi. This influx of migrants has encouraged local farmers, and fishermen to become gold miners. The profits obtained from mining gold by some miners such as Pak Budiarman, Pak Ardin, and Pak Yasmin, in the village of Wumbubangka were invested to buy paddy land, gardens, and even shops, and fish ponds. In addition, farmers also invested their profits from the mine to build a water pump in their rice fields that were previously irrigated the rivers. The rivers are already damaged by the artisanal miners. Now, their ricefields are affected by water shortages. Conversely, very rarely did the farmers invest the profit from the production of agriculture and fishery to support any mining activity. Nevertheless, their farmers also got profit from paddy, cacao and fishery sold to Kendari.

The shift from farmer to miner and vice versa, or combining the two jobs, is very common in gold mining areas of Bombana. Changes or mixture of the job particularly depends on their rational considerations. Pak Ardin, a successful Moronenean miner from Rau-Rau village, has continuously been mining for 5 years (2008-2013). During that time, he was not worked in his paddy fields or garden, because there is more income from gold. Similarly, many farmers tended to ignore the cultivation or stopped going to sea to catch fish. At the district level, the graph below proves the production of rice dropped dramatically from 54,865 tons in 2008 to 17,490 tons in 2009. The lack of clean water from rivers and rice is not harvested have also contributed to this decrease. After mining leases were given by the district head to companies, the area of mining available for local people became very limited, mosty of people turned back to work in the paddy fields. As a result, rice production increased in 2010 and the following years compared to 2009.

![Figure 5 Rice of Production in Bombana District, 2007-2013 (in tons)](image)

Source: Data compiled from Kabupaten Bombana dalam Angka, 2008-2014.
After 5 years mining for gold, Pak Ardin started to combine his job, as a foreman in gold mine and as a farmer in 2014. He exploits mining by hiring people who did not want to work in farming. The nature of work of miners is seasonal, temporary, and based on the consideration of profit obtained from mining or from agriculture and fishery.

Pak Budiarman, who was a very rich man in Bombana during 2008-2009, has invested a little of his profits obtained from mining gold to buy land 600 hectares located in the sub-district Rarowatu and North Rarowato. Now he has more time to work at his garden than at his mine site located in the area of private mining company. He got his brothers and extended family members recruited from Poleang and from South Sulawesi to work at his gold mine. Similar to Pak Ardin, Pak Budiarman also realizes that working in the agricultural sector is more secure, and sustainable than gold mining.
7. Use and Adoption of Technology in Mining Gold
There are three types of mining technology. The first mining is panning, the second is extracting (e.g. pitting, trenching) and processing/gold separation of gold grains by using a mini-sluice box (kapstok) and panning. This is known as parit mining. The third is spray mining or Tambang Semprot. For panning, the miners only need a wooden or metal pan (often a frying pan). It was because of the high demand for the tools that incompatible with increasing number of miners entering to the mine site in the first months in the rivers of Tahi Ite, Wumbubangka, and Lankowala. In 2008, the price of frying pan at mining site in Bombana could be 10 times of the market price, up to 180,000 rupiah per piece.

Gold panning process is carried out in a river body. It aims to separate the gold grains still mixed with mud, sand, gravel which is taken from the bottom of river, and panned directly at that place. As gold is heavier than sand or gravel, repeated washes of water removes most of the sand/gravel leaving gold in the pan. Panning is done both by men and women as well as children.

The second mining method involves digging wells or trenches. This method was used when the number of miners had grown to tens of thousands, leaving no space for panning in the river Langkuwala. Consequently, the miners dug wells at the riverbank. The excavated material was then carried to the place of manually panning. They first removed the covering of soil (clay), and coarse grained material. After that, the miners begin to do panning below the surface of a river or a niche that contains water.
Equipment needed for this second approach are a shovel, crowbar, bucket, bamboo matting, and carpets. These can actually be obtained from the merchants who come to the mine site, at a higher price than the market in Kasipute, Bombana. For example, the normal price of shovel in the market was IDR 15,000, but IDR 80,000 at the mining site. The bucket price also increased from IDR 20,000 to 40,000. Similarly for bamboo mats and carpet.
The excavated material is first put into a sluice box lined with a bamboo mat for an initial sorting process. It aims to separate out the coarse grained material (gravel). After several rounds of casting material and water into a small sluice box has been done, the carpet is removed and washed in a basin or bucket, and then the gold is separated from mineral impurities in the form of black sand by panning. The advantages of this procedure compared to panning are that the fine-grained gold which can be captured. It requires additional excavation costs. The second mining technology is generally done by men in groups of three to five. The first and second type of mining is done by people who have limited capital.

The third mining process is spray mining. This is a technique particularly applicable to recovery of very fine gold grains from tailings dumps that escape the previous two processes. Spray mining is mostly done by migrants who already have experience in this type of operation. The tools that used for this procedure are two pumps with powerful 8 horse power (PK) and water hose 4 inches for small sluice box and for pump 24 horse power (PK) while the bigger sluice box needs a hose 6 inches. Hose lengths depend on the distance of mining from water sources. Sluice box is no longer made of woven bamboo, but it made from the board with a wooden frame and a rectangular-shaped box with long size 3 metres, a width of 1 metre and a height of 0.3 metres that base covered with carpet and riffle. A summary of the equipment and its cost is provided in the Table 1.

Table 1 Type of Mining, Equipment and its price

<table>
<thead>
<tr>
<th>Type of mining</th>
<th>Equipment</th>
<th>Price (in rupiah)/piece.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Panning</td>
<td>Frying pan</td>
<td>Up to 180,000</td>
</tr>
<tr>
<td></td>
<td>Wooden pan</td>
<td></td>
</tr>
<tr>
<td>Wells/trench (Sumuran/parit)</td>
<td>Hoe</td>
<td>30,000</td>
</tr>
<tr>
<td></td>
<td>Crowbar</td>
<td>40,000</td>
</tr>
<tr>
<td></td>
<td>Woven box/kasbox</td>
<td>150,000</td>
</tr>
<tr>
<td></td>
<td>Bucket</td>
<td>15,000</td>
</tr>
<tr>
<td></td>
<td>Wooden pan</td>
<td>250,000</td>
</tr>
<tr>
<td></td>
<td>Frying pan</td>
<td>Up to 180,000</td>
</tr>
<tr>
<td>Mine Spray (Tam-bang Semprot)</td>
<td>Spray machine and suction machine</td>
<td>18,000,000</td>
</tr>
<tr>
<td></td>
<td>Hose</td>
<td>750,000</td>
</tr>
<tr>
<td></td>
<td>Hose Shooting</td>
<td>150,000</td>
</tr>
<tr>
<td></td>
<td>Woven box carpet (7 pieces) @Rp. 150,000</td>
<td>1,500,000</td>
</tr>
<tr>
<td></td>
<td>Pipe paralon (7 pieces) @Rp. 200,000</td>
<td>1,050,000</td>
</tr>
<tr>
<td></td>
<td>Hose spiral (5 metre)</td>
<td>1,400,000</td>
</tr>
<tr>
<td></td>
<td>Wood for place of the machine (1/2 cubic of wood)</td>
<td>1,000,000</td>
</tr>
</tbody>
</table>

Source: Taken from interviews with informants in February 2015.
The miners begin by spraying the heap material (tailings) with the first pump (P1). Spraying transforms the tailings into sludge (pulp) which is then aspirated with a second pump (P2) so that it flows into a sluice box or palong (long toms). After about 3 hours of accumulation, the carpet is removed, and the material that was stuck in the carpet is removed and panned, Spray mining is not only done in Tahi Ite area but also in Satuan Pemukiman or Settlement Unit 6 (SP 6, SP 8, and SP 9). Mining activity is not only done on the river body, but also it penetrated to the branches of dry river (intermittent) even in upstream. The downsides of this mining typology are the dependence on the availability of water and when spraying is done on the river cliffs that are quite steep, it could potentially cause landslide. This mining is generally done by a group of five to ten people, and usually in a partnership between investors and miners who have long experience in the operation of the spray mining.

How much the miners spend on gold mining equipment per month or year is uncertain and depends on how the miners maintain the equipment.

In general, spray mining needs greater capital. Most of the capital is derived from the profit already obtained by panning and digging. Miners can purchase the machine on credit at the hardware store with foreclosure a risk if the miners could not pay off their loan. Not infrequently, the machines are capitalized by civil servants, legislators, and other rich people either living in or outside Bombana.

According to data of the Department of Mines and Energy Bombana district, by the end 2008, there were about 3,000 pieces of pray machines in operation in Tahi Ite and Wumbubangka. These machines have caused significant damage to the landscape. By the end of 2008, for example, in Tahi Ite and Langkowala rivers were no longer easily recognizable as caused by covering of tailing.

Some miners who got benefit from panning bought a spray machine hoping that mining work will be lighter. Pak. Yasmin came from Bone to Bombana in 2008. Initially, he was a panning miner, and then he rose to dig wells, and finally he has 7 spray machines. With the spray machine, his work much easier. The problem that he faces is that he finds it increasingly difficult to get fuel oil.
Picture 11 Worker preparing equipment for spray machine.

Picture 12 Workers preparing for installment of machine equipment in location.
8. Property Rights and Resource Access

Overview of Local Mining Activities

Mining sites in the Bombana district can be regarded as newly-built industrial villages, and far more crowded than that of local settlements. There are mosques, foodstalls that sell a variety of needs, ranging from rice, snacks, drinks, up to wooden trays. Life in the mining sites is very expensive. The price of goods is much more expensive than the market price by a factor of 2 or 3. Lack of cash has forced miners to use gold as a "new currency."

The most numerous forms of shelter are in the form of blue tents. These tents provide shelter and in activities such as cooking, giving birth, performing massages for miners who are very tired working all days, and for making arrangement for prostitutes. The most crowded site in 2009 is located in the village of Satuan Pemukiman 9 or Settlement Unit 9. There are three cafes for entertainment for at night. In Wumbubanka village, one cafe is located in front of a junior high school, but now the cafe is empty, because mining activities have moved to another location. There are policemen and "strong man" whose tasks are to control the mining site. They take informal fees from the miners several times a day, so that the miners feel insecure working in the mine.

Friday it is a holiday. For the newcomers, they remain stay in blue tents or go to Rumbia or Kendari. But for the local miners, Friday is the day to return to their homes, seeing the rice fields or livestock or cleaning their house or doing social activities. When we were going to the mine site owned by Pak Budiarmar, located in Padang Bila, near the river Tahi Ite, many mine workers return to their village in Poleang. On the day they have time enough to visit family or to tidy up their homes in the village or socialise. This is a different situation from Wumbubangka villagers, District Rarowatu as the mine site is next to their village, so they do not need to stay in mine site.

Miners get dirty, mixed with mud, but they work enthusiastically, digging land and hoping they find the gold sand. Miners compete with each other, not to mention that 'jungle law' is valid— for who is strong, would be the winner. Therefore, the miners are very afraid to leave their mine sites. Once they leave it, other people can occupy the place. At the mine site, clean water is lacking. The miners buy clean water for drinking and cooking from a special water seller who comes to the mine site every day. As for bathing and washing clothes, they look for water in small rivers, but most of the water is also not clean.

Type of Mining

There are three types of gold mining in Bombana. Firstly, gold mining is done by local people and migrants. Secondly, mining is carried out by private companies. There are 49 gold companies that are scattered throughout Bombana district. About 24 of them are located in sub-districts Rarowatu and North Rarowatu, while the rest is in the district Poleang, Rumbia, Lantari Jaya, Mata Usu, Mataoleo, and a very small number found on the island Kabaena. Thirdly is a Local owned Gold Mining Company or Perusahaan Daerah, Perusda) was established with the intention to increase the Original Regional Revenue of Bombana district.
At first mining was carried out by informal miners in Tahi Ite River, then spreading to the village of Rau-Rau, Wombubangka river, continuing to Hukaeya village, and then moving towards transmigrant areas called as Settlement Unit 8, 1, 2 and Settlement Unit 9. (Interview with Pak Sultan, 21 February 2015). In general, they do mining in river flows such as in streams Tahi Ite River, located in Settlement Unit 8 and Settlement Umut 9. However, since October 2008 some newcomers mine in a new location, Gondrong, in Bukit Penyesalan (also called Bukit Tobat). This location can be reached after 5 to 6 hours walking from the river Tahi Ite to its watershed. Mining is not just limited to panning but includes excavations and extends into the cocoa plantations located around the edge of the river. This informal mining area encroaches on rainfed ricefield areas and communities settlements. 

Until 2009, mining activities were carried out on a small scale by local people. But by the end of 2009, the local government controlled all mining activities with threat of physical violence, involving policemen. Afterwards, the government issued 49 District Mining Authorizations to mining companies, which are mostly based in Jakarta. With the presence of gold mining companies, the informal miners find it increasingly difficult to mine, because most of the area has been leased for private mining and to a locally owned gold mining company. Therefore, they had to move into an area those of the two mining companies. They mine illegally, or they mine gold in the areas of private mining companies with permission.

*Picture 13Blue tents generally are the most important house for gold miners. This picture was taken in 2009. In February, 2015 this area was empty, the miners having moved to a new mining site.*

Most immigrants or residents who live far away from the mine site, tend to stay in the blue tents when mining. Often, migrants who profited from mining bought land in Bombana and settled there. They go once a week back to their respective villages. Both migrants and local residents mine in compatriot or as an ethnic group. For example in the mining region Roko-roko, of the Toraja ethnic group from Palopo, tribal ties and habits were brought to the mine site, such as gambling on cock fighting.
Type and status of land ownership.
There are three kinds of type of land ownership in Bombana district.

1) Individual or family land rights. They are both registered and unregistered. Registered lands have a Certificate of Land (Surat Keterangan Atas Tanah, SKAT) approved by the customary head, village and sub-district heads. Registered individual or family land is mostly owned by migrants, mainly the Buginese people who bought land from the indigenous people. Unregistered individual lands are the result of displacement of customary land to private owners among the Moronenes. In some cases, migrants, particularly the Buginese buy land from the Moronenes. The process of land transfer was essentially gradual, but after gold mined in 2008, the transition of land ownership rose sharply.

2) The Ulayat or Communal Land. The communal land or customary land is that of the ethnic Moronene who are now divided into several clumps family. The status of communal land is partly has owned land documents called Surat Keterangan Atas Tanah or SKAT or in a form of a Certificate of Land, which was passed by the customary head, village and sub-district heads. The SKAT can become the basis for the preparation of land certificates issued by the National Land Agency (BPN). Most indigenous land has not been registered. According to the chairman of the Institute of Indigenous Moronene (Lembaga Adat Moronene), this communal land is the land that is now subject to the most extensive mining. This communal land has been divided into several family clumps. In Rumbia, this communal land owned by the clumps family Bowondo Burono; in the River of Tahi Ite by the clumps family Muliana Jotu, Novi Alifa, and Tin Tin, whereas in
Poleang subdistrict it is owned by the clumps family Mokole M.Tamal, and Mokole Bungku (Interview with Pak Sultan, February 2014).

3) **State owned land.** In Bombana, the status of state land is unclear and problematic. Government regarded ex-transmigrants land located in SP 4 to SP 9 as state land. Therefore, the district head issued permission to gold mining companies located in Rarowatu and North Rarowatu. The mining permits have led to one of the vertical conflicts between Moronene's community with local government.

Mining occurs within areas managed as production and national conservation forests. Mining in the latter is infrequent as conservation forests are subject to tight control compared with production forests. Nearly half of the mining area is in production forest, and the other 50% is still used by local people. Even the production forest area has become the area of PT. Sultra Utama Nikel (PT.SUN) located in production forest in the sub-district Lantari Jaya and Rarowatu (*Suara Kendari*, 19 May 2014). This has led to continuing disputes between the communities and the gold mining company.

### Access to resources, environmental degradation and land and social conflicts

Claims by local people to their lands located in areas of forest production are based on the SKAT. A company, PT.SUN has also a legal title to the land issued by the local government and department of forestry, especially in relation to mining permits in the production forest. To resolve this, the Regent set up a verification team, consisted of people from the Department of Mineral and Energy, Department of Forestry, Land Agency, representatives of community and gold mining companies (*Suara Kendari*, 19 May 2014).

There are four ways to gain access to the mine site. First, an entry card can be used, which is issued by the local government. Secondly, miners in cooperation with land owners. Third, miners gain support or cooperate with local authorities, by giving a profit each month to certain officials who have guaranteed them continuity of mining; there is informal agreement was made between the two sides. Fourth, the miners could mine on mining company areas or on individual lands located in mining companies or on lands owned by local officials given by the mining company informally.

Local officials have mining locations located wrongly in the area of mining company. The mine site is worked generally by artisanal miners. That means they say that and they have rights to mine. After many mining companies obtain permission from the local government, then informal miners seek illegal sites located between the areas of the mining company and the local government-owned gold company.

Mining activities, including gold mining in Bombana have led to environmental degradation and social problems. The effects of environmental degradation are varied, ranging from erosion and murky river water that closes the flow of rivers, destruction of
forests and its ecosystems, and finally to the lack of water for the daily needs of villagers and on irrigated rice fields area.

*Picture 15 Environmental damage caused by gold exploitation in Wumbubangka.*

A stretch of River Tahi Ite is being severely damaged, losing its shape and being replaced with excavation and pools of brown water. According to the calculations of Hadi, (2009) damage to the watershed landscape in Wumbubangka covers 80 ha., while for the Tahi Ite reach the extent is about 95 ha. These areas do not include the impact of small-scale mining in PT. Metal Panca Makmur’s lease (Hadi, 2009). Turbid river water, brown, mixed with mud, settles on certain parts of the river. Miners have also penetrated and damaged creeks there. Because of the lack of clean water, they use the turbid river water for daily needs such as bathing and washing.

*Picture 16 Brown water of river used for bathing and washing by local people.*

Dams are damaged and can lead to shortage of water for rice fields. Many cocoa plantations in the river have turned into mining sites as have rainfed rice. An unfilled pit that was flooded led to the deaths of children near Wumbubangka. The village is also now surrounded by desert, gravel, which became small hills, and here and there interspersed with holes dug in the flooded water. However, the direct impact of mining in the region has not been found downstream.
In addition to bringing erosion, and causing turbidity of its water, gold mining is impacting on the area of production forests. The impact is felt directly is the absence of forest buffer for storing water during the rainy season. The result is that Bombana now gets frequently flooded. The biggest flood to the area submerged the Reget’s office with water depth up to 1 metre deep in 2012. In contrast, during the dry season, lack of clean water becomes the issue. Even in a new mining area in Poleang district, 1 month of dry season has already led to water shortage. This never happened before.

Until now there has been no social conflicts are latent on the effects of environmental damage caused by gold mining. Latent conflict is actually happening on the land issue between the Company Mining Business Permit (IUP) with Indigenous communities. Moronene society claimed that the lands which are in the four former settlement of transmigrants from SP 4 to SP 9, located in the district and sub-district Lantari Jaya Utara Rarowatu is abandoned their communal land. This region was abandoned by migrants as a result of unfavorable agricultural and access to marketing their agricultural production difficult.

Prior to finding gold on the land, there was no conflict there. However, after the discovery of gold, issues concerning customary rights become a source of conflict between a number of public figures and their families, claiming that location as an area of their customary rights. Without consulting the people, the regent considers these lands belong to the state, and has given permission mining concession to PT. Panca Logam Makmur, PT. SUN dan PT. Dinasti.

Consequently, a number of traditional Moronene leaders started imposing levies on miners, when they came into their communal area. That is why dozens of the Moronene people who call themselves as *Forum Masyarakat Rumpun Pewaris Tanah Adat Rarowatu dan Rarowatu Utara* (Community Forum for Indigenous Lands in Rarowatu-North Rarowatu) protest to local Parliament and urging the Regent of Bombana to revoke operating permits given to PT. Panca Logam Makmur. The mining operation has been detrimental to the indigenous community. These claims to land by indigenous community against mining companies continue.
To resolve the problem, the local government with the leader of customary institutions, members of parliament, the police, and the communal land owners formed a team with the task of verification of lands. From the investigation, it seems there is a lot of overlap between communal, individual lands and the mining companies lands (interview with Pak Herman, member of verification team, 21 February 2015). Issue of mining permits by district head is not accompanied by measurements in the field. Finally, the conflict is finally solved with the agreement that the owner of land would get 10 percent of the gold produced by the company, whereas the company would get the rest.

Land conflicts between local community against the company began to decline, but the internal conflict between the members of clumps family that have communal land until now kept going on. Conflict is derived from unsatisfactory arrangements for profit sharing for family members. (Interview with Chairman of local Parliament Bombana, 22 of February, 2015). In addition, conflicts also occur between individual land owners that their lands are located in the mining company area. Pak Yasmin, a small miner who came to Bombana in 2008, said that the contract made by PT. SUN, is unsatisfactory. This dispute is going on even up to present time (Interview with Mr. Yasmin, February 2015).

In addition to land conflicts caused by widespread mining in Bombana, there are social issues that relate to gold mining activities such as alcoholism and prostitutes. Although local government prohibits the sale of alcoholic beverages in cafes built around mining sites, but to little effect. Prostitutes come especially from Manado, Toraja as well as West Java. They come to the mining area, stay in the cafes and the transaction is in gold powder. Cock fight is one of the traditional forms of gambling among miners from Toraja in Roko-roko mines site, sub-district Rarowatu that have brought them into debts as well. Individual fights between gold miners that originate from alcoholism and prostitutes are very common at the mine site. Even, a drunken miner from Palopo, Toraja, was involved in physical conflict with the king of Rumbia (Mokole) about the appointment of two overseers at a mining site owned by the Mokole (Interview with Raja Mokole, 19 February).

9. Illegal Mining Practices

9.1. Introduction
In the perspective of the law, businesses that do not have permission from the government, do not pay taxes are regarded as something illegal. This point of view becomes a basic reference of Department of Mining Office of Bombana district to determine whether a mining activity is legal or illegal. The distance between legal and illegal mining is basically blurred. In the case of the mining companies that have received mining authority (Izin Usaha Pertambangan or IUP), they have also been running illegal mining activities, beginning from upstream up to downstream, and on the other hand, artisanal or people’s mining considered as illegal mining has different ways in seeing the issues of legal or illegal.
The issues of legal and illegal of gold mining in Bombana are not a question of normative law, but needs further analysis about mining practices in a wider context. How did the local government issue mining permits? Did the process conform to regulations? How the process of production practiced? Similarly, for miners who do not have Mining Permit, have they have been working by themselves, or are there certain elite groups who have benefited from the situation, or they have organised illegal mining to be ambiguous? And then, could the mining regulations issued by local government be implemented by the mining company and the society?

To answer these questions, this short research can be mapped in three ways; first, the law instrument of local government that regulates the mining activities is the yard stick for the local government to determine whether mining activities as legal and illegal. Secondly, whether getting mining authority has been within the law, both for companies and artisanal miners, and third, whether the mining has been performed legally, both for companies and artisanal mining. The third aspect will be viewed through relationship between government, mining companies and communities.

9.2. Local Government Regulation: From “Cards to IUP”

Entry Mining Cards (KIMP) was an early legal instrument that had been issued by the local government in regulating people’s mining in Bombana. Every miner had been obligated to have an Entry Cards Mining (KIMP) if they wanted to get access to the mining site. The further question is intention of the Entry Mining Cards to authorise artisanal or people’s mining— is it a levy intended to increase local revenues? How accountable is the KIMP process - how many cards were sold, and in what condition the miner could get a KIMP?

According to various sources obtained from interviews, the KIMP policy has no legal basis, both in national mining regulations or in local mining legislation. The KIMP policy was a local government initiative, without involving the Local House of Representative (DPRD), the local parliament that has the authority to justify draft of regulations. KIMP was issued without considering the legal aspects and environmental impact. Even from information obtained from some of the interviews with informants showed that the initiator of KIMP came from certain groups outside of governmental offices. They were previously part of a success team of the election campaign for former head of Bombana district. They have the power to control the government. The group was trying to get a profit from the rise of the gold mining exploitation at the time.
The illegal practices of KIMP policy developed with the emergence of card brokers and card counterfeiters with various prices. Bombana local government did not sell KIMP directly to the miners, but some elites in the government used "thugs" as an agent of the KIMP. Basically, had the KIMP been controlled properly, besides adding to local revenues, it would have made it easier to record the flow of incoming immigrants into Bombana. Adding to the problem was that, KIMP program did not have a standardized miner, both in terms of security, safety, and insurance. Anyone could get the KIMP, all ages and genders. Only one condition was having financial ability to buy the KMP card.

Therefore, local governments actually tried to legalize illegal practices. Illegal in this context is not just the legal basis of KIMP but also improper, corrupt brokering practices violations of the rules of supervision and transparent financial management. In an interview, Andi Nasir, an agent appointed by the local government to sell the cards, said that the although Entry Mining Cards (KIMP) were signed by the Regional Secretary, most of them was falsified (photocopied). Andi Nasir said that he got a huge profit from scanned and reprinted cards (around IDR 450,000,000), that did not have to be handed over to the local government. Andi Nasir was just one example of the agents who had right from local government to sell KIMP. After the Entry Mining Cards had ended in 2009, the local government issued mining authority (IUP) for mining companies that are mostly based in Jakarta. There are about 87 companies got IUP in Bombana. Since that time, gold mining activity in Bombana entered a new era where large-scale enterprises begun to operate in this area up to present time.

In issuing IUP, the Bombana government was also negligent in not having proper checks and conditions before IUP was issued. For example, the government did not undertake
community consultation and other research on the region which would become a region of mining authority for the company. The government should have collected data on the status of land ownership that would become the mining area. However, the issuance of IUP was only done on the basis of a map.

The shortcomings of the local government in regulating mining activities in Bombana were led to the problems now being experienced. The initial errors in mining management spawned new illegal practices, both in the production process and marketing.

**Picture 19 Discussing with Vice Head of District of Bombana (February 2015).**

### 9.3. Illegal mining practices in the Production Process

Illegal practices in the production process carried out by both the mining companies and the artisanal mining. Only four of the fifty-four mining companies have authority to mine gold mining in Bombana. Most of the companies only have notional office, sometimes none at all. Mining companies utilize artisanal miners as their labour force to great profit. The arrangement is called “partnership” by which the mining companies provide space to conduct mining in their territory with a profit-sharing system. Thus, the mining companies earn much profit without the cost of production because they only provide heavy equipment to dig a mining hole, subsequently it is progressed by artisanal miners by using diesel machine (spray) and the “panning” at the finishing stages.
Partnering with local communities in mining area of companies authority is an illegal practice for three main reasons; first, the mining companies gave permission for artisanal mining but the local government did not issue the mining authority for artisanal mining. Secondly, there are no rules about who can be a partner with a mining company. The applicable regulation is a company giving opportunity to another company to do sub-contract in mining area, and third, no consideration was given in regard to the legality of the government, safety, and insurance. The companies only consider that after they got the authority to mine, all forms of mining activity in their authority.

The practices of partnership mining are designed to accommodate land owners who protest against the mining company and arose because local communities were not consulted when issuing the mining authority (IUP).

In addition to illegal practices of companies, illegal mining can also be found that does not get permission, either from the company or from the government. This type of illegal mining is done secretly. However, in their view that they are illegal miners because they only do the mining on their own land, while they regard that the mining companies actually have been occupying their land without permission.

Illegal company mining practices can also be found in the provision of "flags" to local elite, officers, members of the legislature. A flag, in this context, is a kind of authority for doing mining in the area of company authority. One flag means one machine in the mining site. Sometimes several local officials received more than one flag. The officials who have received the “flag” employ artisanal miners in their flag authority area with a profit-sharing system.

9.4. Illegal Mining Marketing

Illegal practices also occur in marketing the gold by artisanal miners; for example the process of collection by collector with mercury. Further, the traders from South Sulawesi and Kendari who have no license to do so. In fact, traders use the services of the security forces provided by mining companies to transport gold from Bombana to Kendari or to Makassar.

10. Structure and Supply Chain of Gold Trade

Exploring the structure of the gold trade chain from the mine to the end user does take a long time. In addition to domestic consumption, export gold from Indonesia is sent to the United States, Germany, and Japan. (PricewaterhouseCooper, 2004) Unfortunately, this short research could not explore further the trail of the gold from mining location in Bombana to those countries. From information obtained, there are four gold trade
routes from the mine site to Kendari or to Makassar City as can be seen below; the actors are miners, collectors, traders, shopkeepers, and mining company. The gold miners, collectors, traders, foodstalls owners and others can have access to the mine site by buying a card entry issued by the government. Purchasing card entry permit used to be valid in 2008 and 2009. After 2009, when the regent gave mining permits to private companies, then people ask for permission from the company to mine in their mine location or request permission to ‘certain people’ who have helped the company to get a mining permit smoothly from the district head. The mining site were given to certain people who were intermediaries in the process of granting mining licenses by the regent to the mining company. In local term they are called as people who have ‘flag’ in mining area of the company.
Figure 6 Chain of Gold Trade

The shortest link in the chain is from gold miners to the owner of the gold shop in Bombana. Most of them are artisanal miners who mine individually and collect the gold sand or gold grains mixed with sand to finally sell to gold shop owner in Bombana. The second shortest path is where gold, mined by people in the area of mining companies is directly sold to the company. Unfortunately, it is not known how the prices compare to the prevailing price in the market. The longest trade route is where miners sell gold powder to the collectors in mine sites. Usually gold collectors have their own mining sites and often also provide advance to the mining group, with an oral agreement that the earned gold is sold to them.

In the early months of the discovery of gold in Bombana, there were about 600 collectors across the district of Bombana (Interview with gold collector, February 17, 2015). The number of collectors decreased dramatically, along with the shift of gold trade chain from miners to gold mining company in 2009. Since that time, the collectors can only collect gold from illegal miners or from the miners who sell illegally gold powder mined in the area of mining company.

Picture 20 Gold Collector from Bone, come to Bombana in January 2015.

The collectors burn golden sand and then making it in slab form, and burning back with mercury or called in local term as Air Perak. Out of that process, the collectors will get dirty gold powder. This process does not take long. The collectors will eventually produce gold powder with 96 percent of the lowest quality. Of the products processed, a collector takes 1 percent of each gram of gold sand bought from miners. A collector also gets a fee from the amount of gold sand he bought. The collectors also gets profit from any gold sand over agreed weight that he bought from the gold miners. In 2012, a collector could get the profit of Rp 10,000 rupiah per gram of gold sand. (Interview with
a collector, Hasan Basri, February, 2015). In general, collectors tend to be dishonest in the burning process of this gold trade.

Gold sand that has been collected by the collector, is brought to gold traders living outside the mine site or in the capital of district. The traders play important role, because they provide capital to the collectors. A collector has certain gold mining sites that is out of bounds to another collector. A trader can have a number of collectors, depending on how much capital he has. To protect this business, he has to pay Rp. 3,500,000 per month to the police and some fees to strongmen who protect the mining site. The police also serve to secure the transport of gold from the mine site to the district capital Bombana or to Kendari or Makassar, if the situation is insecure, because robbery of gold is common.

Gold traders can be divided into two categories, the gold shop owners and the brokers who get capital from gold shop owners in Kendari or in Makassar. In general, they are Chinese and Buginese. There is no written agreement between the owners of capital with gold traders or brokers. Their working relationship is based on a relationship of trust that has long been formed between traders and gold shop owners and also between the owner of a gold shop in Kendari with a gold shop owner in Makassar. The gold trader brings gold to the gold shop in Kendari or Makassar to be processed into jewelry and gold bars. However, most of the gold shops in Kendari are a branch of gold shops in Makassar or closely related to the gold shop owners in Makassar; the gold shop owner in Kendari also sells gold bars to gold shops in Makassar.

Picture 21 Arizal, a gold trader and his father has gold shop in Kendari (taken in Kendari, February 2015).
The traders buy gold at 5% less than the world gold price per gram as some further processing is needed. Traders then sell gold bullion to the goldsmiths for a variety of purposes both for jewelry and gold bars. The table below shows the movement of international gold prices prevailing in Bombana. In the first months of exploitation of gold mining in Bombana, the gold price did not follow the price movements in international gold market, but was set by gold traders who came to Bombana. But after then, the price of gold per gram followed the movement of prices in the international market. The table below shows the price movement of gold per gram in Bombana.

Table 2 Price of Gold, 2001-2012, 2015

<table>
<thead>
<tr>
<th>Year</th>
<th>Price of gold per gram (in rupiah)</th>
<th>Equivalent Price per Ounce (in USD)</th>
<th>Approximate Global Market Price for Gold (July 1st of that year) (USD per ounce)</th>
</tr>
</thead>
<tbody>
<tr>
<td>2001</td>
<td>89,370</td>
<td>266</td>
<td>268</td>
</tr>
<tr>
<td>2002</td>
<td>92,633</td>
<td>285</td>
<td>312</td>
</tr>
<tr>
<td>2003</td>
<td>100,166</td>
<td>341</td>
<td>350</td>
</tr>
<tr>
<td>2004</td>
<td>139,009</td>
<td>437</td>
<td>395</td>
</tr>
<tr>
<td>2005</td>
<td>177,405</td>
<td>508</td>
<td>432</td>
</tr>
<tr>
<td>2006</td>
<td>177,962</td>
<td>540</td>
<td>622</td>
</tr>
<tr>
<td>2007</td>
<td>204,888</td>
<td>645</td>
<td>655</td>
</tr>
<tr>
<td>2008</td>
<td>269,650</td>
<td>848</td>
<td>940</td>
</tr>
<tr>
<td>2009</td>
<td>323,283</td>
<td>893</td>
<td>940</td>
</tr>
<tr>
<td>2010</td>
<td>357,357</td>
<td>1118</td>
<td>1235</td>
</tr>
<tr>
<td>2011</td>
<td>402,927</td>
<td>1323</td>
<td>1480</td>
</tr>
<tr>
<td>2012</td>
<td>550,250</td>
<td>1651</td>
<td>1590</td>
</tr>
<tr>
<td>2015</td>
<td>470,000</td>
<td>996</td>
<td>1170</td>
</tr>
</tbody>
</table>

Source: Taken from a trader’s note, Pak Hasan Basri, February, 2015.

The table shows the price of gold in Bombana and a gold trader would get 5% profit of price of gold per gram from the delivery of gold to the owner of gold shop in Kendari or in Makassar. Unlike gold traders who do not have agreement with the owner of gold shop in Kendari or in Makassar, their position is strong in deciding when they have to sell gold bars to the owner of gold shop. They look at the movement of international gold process daily and may stay a week or more in Makassar, hoping profit from a rising price of gold (Interview with a gold trader, Afrizal, 16 February, 2015). From Makassar, gold is bought by big traders from Jakarta, mainly Chinese to be sold in Jakarta and in other cities as well. Unfortunately, this research is unable to trace gold trade chain from Kendari or Makassar to Jakarta or outside Indonesia. But is clear that gold produced by artisanal miners is twice than that of big gold company.
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