

Climbing The Stratification Ladder and The Decreasing of Small Entrepreneurs Number In The Field of ASGM In North Minahasa, North Sulawesi ¹

Antonius Purwanto

Department of Sociology, Universitas Sam Ratulangi

E-mail: antonius.purwanto@unsrat.ac.id

Abstrak

Artikel ini merupakan hasil penelitian terhadap pertambangan emas skala kecil dan tradisional di Tatalu. Penelitian dilakukan dengan menggunakan teori arena dan metode penelitian kualitatif. Dengan adanya izin dari pemerintah, kegiatan pertambangan menjadi stabil karena ada kepastian hak milik. Kegiatan pertambangan dikelola sendiri oleh para pengusaha, koperasi, dan pemerintah desa dan telah memberikan kesejahteraan bagi masyarakat Tatalu dan sekitarnya. Penduduk desa yang terlibat dalam pertambangan telah mentransformasi modal ekonomi yang diperoleh dari pertambangan menjadi modal fisik dalam bentuk infrastruktur desa, perumahan, modal budaya atau pendidikan, dan investasi dalam kegiatan ekonomi lainnya. Ada mobilitas vertikal beberapa penambang dan pengusaha. Mobilitas vertikal dimulai setelah ada stabilitas kegiatan pertambangan di mana kapasitas agensi para aktor dapat diwujudkan dalam bentuk tindakan yang memungkinkan akumulasi modal. Semakin dalam lubang tambang untuk mendapatkan bijih emas, semakin sulit mobilitas vertikal penambang dan pengusaha dengan modal ekonomi yang terbatas karena biaya penambangan semakin mahal. Ada indikasi bahwa pengusaha dengan modal kecil akan semakin berkurang karena mereka tidak dapat membiayai bisnis pertambangan. Hasil penelitian ini akan mengarah pada kesimpulan bahwa di bidang pertambangan skala kecil modal ekonomi jauh lebih menentukan daripada modal budaya dan kapasitas agensi para aktor semakin terbatas ketika lubang tambang semakin dalam.

Abstract

This article is the result of research on artisanal and small-scale gold mining in Tatalu. The study was conducted using field theory and qualitative research methods. With the permission from the government, mining activities become stable because there is certainty of ownership rights. Mining activities are managed by entrepreneurs, cooperatives, and the village government and have provided welfare for the people of Tatalu and surrounding areas. Villagers involved in mining have transformed economic capital obtained from mining into physical capital in the form of village infrastructure, housing, cultural or educational capital, and investment in other economic activities. There is vertical mobility of several miners and entrepreneurs. Vertical mobility begins after mining activities are stable where the agency capacity of the actors can be realized in the form of actions that allow capital accumulation. The deeper the hole to get gold ore, the more difficult the upward mobility of miners and entrepreneurs with limited economic capital because mining costs are increasingly expensive. There

¹The research was conducted without the support of research funds from any institution. The writer thanks to the information support from John Lausan (head of Tatalu Village), Indra Nelwan, (village secretary), Kevin Dipan, Marcos Dipan, Andry Paath, Gideon Hormati, Glenn Wuisan, and Arfan Mamonto.

are indications that entrepreneurs with small capital will decrease because they cannot finance the mining business. The results of this study will lead to the conclusion that in the field of small scale mining economic capital is far more decisive than cultural capital and the agency capacity of the actors is increasingly limited as the mine hole deepens.

Keywords: miners, entrepreneurs, capital, stratification, mobility

INTRODUCTION

Artisanal and small-scale gold mining (ASGM) is an important source of livelihood for rural communities worldwide, especially in developing countries. It is estimated that more than 100 million people in developing countries depend their lives on these mining activities (Koame, Jiang, Feng, and Zhu 2017). According to the Ministry of Environment and Forestry in Indonesia, there are 2,166 ASGM in 2019. The number was increased from 302 in 2005 and 850 in 2017. There are 14 ASGMs in North Sulawesi, both legal and illegal, located in the regions of Minahasa, Bolaang-Mongondow, and the Sangihe-Talaud islands. ASGM is characterized by rudimentary techniques that commonly result in significant environmental degradation in the immediate surroundings and poor socio-environmental conditions in the human settlements where activities are carried out (Cuvelier, Vlasseroot, and Olin 2014; Saldarriaga, Palacio and Arango 2013). Also, the ASGM has characteristics such as high informality, the uncertainty of property rights, insecurities, and weak control by the state (Sanchez-Vazquez, Espinosa-Quezada, and Eguiguren-Riofrio 2015; Coubaly 2017). In overcoming the problem of ASGM, the government tends to favor large companies and ignores the interests and views of traditional miners and local communities (Dondeyne and Ndunguru 2014; Astuti 2015; Hilson and Potter 2005).

There are some writings about the relationship between ASGM and poverty. Astuti (2015) and Harianja and Sukmana (2014) examined the impact of illegal mining on the improvement of miners' families and surrounding communities. Gamu, Le Billon, and Spiegel (2014) reviewed research results from 1956 to 2012 about industrial mining and small-scale mining by taking into account the extraction modes (industrial mining and ASGM), national and local effects of the industry, and its research methods. The review results show ASGM is better able to reduce poverty at the local level than industrial mining. The same is also demonstrated by the results of studies by Langston et al (2015). Using a landscape approach, the studies compared the impact of

ASGM and industrial mining on local communities in North Sulawesi. The results showed that ASGM was more capable of overcoming poverty than industrial mining. The ASGM absorbs more labor from the surrounding community and migrants coming from afar. Industrial mining is unable to absorb the local workforce in large quantities and the CSR is given to the surrounding peoples only have limited benefits for the development of local communities surrounding it.

Teklemariam (2015) examined the role of ASGM on sustainable living and Tenkorang and Osei-Kufuor (2015) examined the impact of ASGM on local agriculture. Although almost all studies show that ASGM has a positive impact on improving the welfare of rural communities, ASGM should not be seen as an alternative livelihood. Cartier and Bürge (2011) and Siegel and Viega (2010) suggest that ASGM should be seen as complementary livelihoods. ASGM has, with the capital generated, the potential to act as a catalyst force in developing small-scale agriculture by bringing it out of subsistence conditions. Complementary between farming and mining was demonstrated by Mkodzongi and Spiegel (2018) about the relationship between farming and mining. They challenged the widespread stereotype of mining and farming as being in a conflict-ridden antagonistic relationship. The accounts of miners drew attention to the realities of inter-locking livelihoods – how ASGM is not necessarily replacing peasant farming, but rather complementing it as a source of income. Although in some places conflicts between miners and farmers have been recorded in Mhondoro Ngezi, a focus on such conflict risks overlooking the fact that miners and farmers increasingly are the same people, for whom these two activities are inextricably intertwined.

Formalization is often associated with efforts to address the issues posed by ASGM such as environmental pollution, occupational safety, and uncertainty of property rights, taxation, and adverse impacts on the local community. Formalization is often voiced by the World Bank and the government. The idea of this formalization closely relates to the idea of Hernando De Soto on the formalization of informal sectors. With formalization, it is hoped that people will easily gain access to capital and other government assistance. In the case of ASGM, formalization is an ambitious idea to address the ASGM problems. Using the emerald mines in Zimbabwe, Siwale, and Siwale (2016) showed that formalization did not benefit mine operators. Formalization is used by the state as a tool to control and replace the operator to the region with a low

economic viability to then be replaced with copper mines. Formalization demands not only strong political will but also strong implementation agencies. Marshall and Veiga (2016) said that formalization initiatives in developing countries will fail if a radical change is not made. The failure was due to the blurred vision of the bureaucrats demanding that artisanal miners submit many documents and proof of legitimacy. Without training and organization of the artisanal miners into cooperatives or associations, it is hard to expect miners to practice clean and environmentally friendly mining. Regulations for artisanal miners must be appropriate for the local context. It is said that artisanal miners will continue to exist as long as there is poverty and unemployment in the village.

This study is related to the ASGM social organization in Tatelu, District of North Minahasa, Province of North Sulawesi. There is little research related to ASGM social organizations. A study of the social organization of a gold mining community was conducted by Coulibaly (2017) in Mali. The study shows how the status and role played by the actors in ASGM so that mining activities run steadily and regularly. Grätz (2019) studied morality and rules governing the relationship between members of the mining group whose formation is strongly influenced by the working conditions of the miners who are full of risks. It can be said that most of the research on ASGM uses the theory of governance or causal theory. This study of ASGM in Tatelu used field theory developed by Bourdieu and Fligstein.

North Sulawesi is one of the provinces in Indonesia that has gold reserves. At present, there are two fairly large gold mining companies operating in North Sulawesi, namely P.T. Avocet Bolaang-Mongondow and P.T. Meares Sopotan Mining. ASGM in Tatelu village, North Minahasa District, is a mine on private land owned by community members. As noted above, the ASGM in Tatelu is one of the 14 ASGMs in North Sulawesi. Mining activities at Tatelu began in 1998. The Tatelu mine has been operating for 20 years and is managed by the community itself. Conflicts are usually present in the ASGM. In Tatelu conflict occurred only at the beginning of the mine operation. There is widespread support from the community of Tatelu and surrounding communities due to its positive impact on improving people's welfare. Mining entrepreneurs and miners can manage their mining and environmental impacts. Entrepreneurs nowadays have used cyanide instead of mercury in gold ore processing so that the negative impact

on the environment has decreased. This makes the government reluctant to intervene that can stop mining activities. Langston et al (2015) clearly show the inhabitants of Tatu and the surrounding communities more benefited by the community-run mining than the communities around industrial gold mines adjacent to Tatu.

Using field theory, the ASGM field in Tatu in this article is seen as an arena where actors compete for economic benefits. Actors with a lot of capital dominate in determining the rules in the arena that must be followed by actors with little capital. In the ASGM fields, economic capital and social capital are far more decisive than cultural capital in upward vertical mobility among actors. (3) Gold as a non-renewable resource and the deepening of a mine hole makes mining costs more expensive and makes entrepreneurs with less capital increasingly marginalized. In the ASGM field, Bourdieu's theory is more suitable than Fligstein's theory because the agency capacity of the actors is more limited to be expressed in actions that produce economic benefits.

RESEARCH METHOD

This article is written based on a study used qualitative research methods. This research method is adapted to the data to be collected in the form of the mine development process and the dynamics of the relationship between actors in the traditional gold mining arena. To get the data, the researcher conducted in-depth interviews with mining entrepreneurs, funders, miners, village officials, cooperative boards, and security officers. Besides, the researcher also conducted observations on mining areas consisting of hills, gold-bearing stone mills, and combustion processes. Interviews were mostly conducted at the premises of the gold processing workshop. Because one of the problems in this study relates to stratification and mobility, this study groups entrepreneurs into three classes, namely lower class entrepreneurs, middle-class entrepreneurs, and upper-class entrepreneurs. Each group of entrepreneurs is purposively taken as informants to be interviewed. The number of informants interviewed was 21 people consisting of miners, entrepreneurs, security officers, and village government officials. The study was conducted from September to October 2017.

FIELD THEORY ON ARTISANAL AND SMALL-SCALE GOLD MINING (ASGM)

In this article, ASGM will be explained using a conceptual framework in field theory. Field theory in this paper is eclectic by combining the ideas of Bourdieu and Fligstein. There are ideas shared by Bourdieu and Fligstein, namely that most social life takes place in an arena where actors take into account their actions. The field is a socially constructed arena where the actors orient their actions one to the other guided by practices, meanings, norms, institutions, and common goals. Actors in the field recognize common meanings, rules, and norms that guide their interactions. The field influences their thoughts and actions by the rules and expectations in the field. The field influences are not deterministic because actors also have agency capacity to make choices (Kluttz and Fligstein 2016).

The field is the arena of struggle where each actor occupies his position with the other actors. Actors from the field can be individuals, groups, and organizations. Actors compete with each other to get resources, status, and especially to define the rules of the game that govern relationships in the field. Relationships in arenas are hierarchical where the dominant actor uses his power over dominated actors. Actors become dominant because of their ability to control arenas, rules, and resources. The main source of the power of the dominant actors in the capital they have (Bourdieu and Waquant 1992; Fligstein and McAdam 2012). There are three forms of capital owned by actors in the field, namely economic capital that can be in the form of money or property rights, cultural capital, and social capital. Which capital is important depends on where the capital functions in the field. In the economic field, economic capital is very important (Bourdieu 2001:281). The position of actors in the arena is determined by the volume and form of capital they have. For example, in ASGM of Tatelu economic capital is the most important. Large economic capital determines the position of actors in the socio-economic hierarchy in the field of ASGM.

Cultural capital exists in three forms: In embodied form, for example in the form of long-lasting dispositions of mind and body; in an objectified form, namely in the form of cultural goods; and the institutionalized form (Bourdieu 2001:282). In ASGM of Tatelu, cultural capital, such as skills in selecting rocks containing gold,

although important but not necessarily owned by entrepreneurs.² Entrepreneurs can employ miners who have these skills. Cultural capital in the form of knowledge of choosing rocks containing gold in ASGM is not obtained through school education but direct experience in the field. Bourdieu said that: “Social capital is the aggregate of the actual and potential resources which are linked to possession of durable network of more or less institutionalized relationships of mutual acquaintance and recognition – or in other words, to membership in a group – which provides each of its members with the backing of the collectivity-owned capital ...” (2001:286) Social capital in the form of a network of long-lasting social relationships will strengthen mutual trust, facilitate information exchange, and reduce transaction costs in business (Granovetter 1985; Coleman 1988). Therefore, social capital also contributes to economic development (Putnam 1993). In ASGM of Tatelu, social capital or social networks make it easier for entrepreneurs to get labor or miners. Conversely, miners are also easy to find work for entrepreneurs who are looking for miners. The existing social capital is formed by social networks that are based on ethnic similarity and similarity in hometowns.

The field can depend on other fields and can also be independent of other fields. However, a field often depends on one or two other fields. Field A depends on one field B means that the existence and change of field A is determined by field B. Most fields depend on the state or field of power because the state can impose rules or laws in other fields (Fligstein and McAdam 2012). There will be no ASGM in Tatelu if the state does not give mining permits. Without police support, it is difficult for miners and entrepreneurs to protect their rights. Besides regulating and protecting property rights, Fligstein (1996) said that the state was also interested in maintaining field stability. Things like this that make a field always depend on the field of power or state.

Fligstein and McAdam said that in the field there are incumbent actors and challenger actors (2011:4). The incumbent has a greater agency capacity than the challengers. In the interest of the members of

²It seems vulgar to use the cultural capital concept to explain ASGM. Bourdieu's definition of cultural capital, according to Lamont and Lareau (1988), often changes and depends on what it is used for. To further clarify the concept of cultural capital, Sullivan (2001) suggests that cultural capital is a cultural capital if it is instrumental for a particular purpose. Therefore, in this paper used the concept of cultural capital as Bourdieu (2001:280-291) written in “The form of Capital” so that its use in explaining the ASGM more acceptable

the field, the incumbent uses his social skills to build a societal network and formulate common goals that transcend its interests. The incumbent is also able to impose rules and norms that govern relationships between actors in the field that benefit the incumbent itself but are still supported - even if only minimally - by the challengers (Fligstein and McAdam 2011:7-8). Incumbents usually have considerable economic resources. At ASGM Tatelu the incumbent was a landowner who later became a mining businessman. He has many social networks and is the chairman of a cooperative whose members are mining entrepreneurs.

THE EMERGENCE AND DEVELOPMENT OF ASGM IN TATELU

The North Minahasa region, like other regions in Minahasa, North Sulawesi, is a green hilly region covered with cloves, nutmeg, coconut, vanilla, and fruits. Because of soil fertility, most of the population work as farmers. Tatelu is one of the villages in Sub-District of Dimembe, District of North Minahasa. Tatelu is an area located on the slopes of Mount Kelabat. Tatelu region is partly hilly and partly flat land. The land in Tatelu is a private land of community members commonly referred to as Pasini land. Most people in Tatelu work as farmers who grow coconuts, fruits, vegetables, and rice. Few Tatelu people work as employees, private employees, and factory workers.

ASGM in Tatelu began with the discovery of rocks that allegedly contain gold by community plantation workers. The rocks were then processed and turned out to produce gold. At that time there were also miners coming from District of Bolaang-Mongondow and District of South Minahasa. The miners have experience in mining in ASGM in Bolaang Mongondow and other places. They then mined gold on land belonging to members of the Tatelu community. This happens because they are used to being illegal gold miners in protected forests owned by the state and assume that everyone has the right to mine it. At that time the miners did not respect the property rights of the owners of the land containing the gold deposit. Tatelu people had no experience and knowledge of gold mining. They only observed what was done by the miners from outside. Because at that time there were no rules governing mining as a result there was fierce competition in obtaining stones containing gold (gold ore). The miners often fight for control of mining holes that contain lots of gold ore. This eventually led to conflict

between mining groups. The situation of the mining area at that time seemed anarchic.

As a result of the seizure of mine holes whose gold ore is considered to contain much gold, violent conflicts between miners from outside Tatelu occurred in 1998. Usually, one mine hole is mined by a group of four to eight people. Therefore, conflicts in mining areas become inter-group conflicts. Conflict at that time involved only groups of miners who came from outside Tatelu. To resolve the conflict, the village government and the police decided that all miners from outside Tatelu had to leave the mining area and return home. A rule was then made that miners coming from outside who wanted to work as miners in Tatelu should bring a travel document from the local government in their hometown and report to the Tatelu village government. With the existence of the rule, the mining field appears to be relatively stable and organized. In the field, there are actors with their respective positions that are stable enough to be guided in relationships between them. The stability of this field allows the recognition and respect of the rights of landowners to control and utilize their land to obtain gold.

After seeing that the income from mining results more from agriculture and plantation businesses, they began to leave agriculture and plantation businesses. After that, many people started buying machinery and equipment to process gold ore. Compared to the present, in the early years of mining activities, it was very easy for miners to get gold ore. Gold ore could easily be obtained without the digging of a deep hole. Sometimes gold ore can be obtained at the surface of the soil. The village secretary Tatelu recounts that at that time a basket of gold ore could sometimes be obtained one ounce of gold (interview, 26/9/2017). A funder, Calvin Dipan, who originally worked in the field of shipping in Papua finally decided to return to Tatelu and work as a miner. Calvin said: "The salary I get in a month is equal to the price of gold earned in one day (interview, 2/10/2017)." The ease of getting money in mining at that time attracted many from outside to come to Tatelu. When compared to the present, the state of the mining area at that time more crowded because of the large number of migrants to mine. The large number of outside miners who came to Tatelu also brought with them the technical terms of local mining in other regions and then used in conversations about mining in Tatelu.

At the beginning of mining activities, namely in the late 1990s, there was also an attempt by an Australian company to exploit the

Tatelu mine. The company assessed that in Tatelu there are many gold reserves compared to other places in North Minahasa. But because the price determined by the company is considered too low, the landowners refused to sell it. Having difficulty continuing operations in Tatelu, The Company threatened to not invest in North Sulawesi. The provincial government also objected if the investor would be operating in Tatelu because the land in Tatelu owned by the community. Operating in Tatelu means the government must relocate the local population to other places. Threats to social and political stability will occur because the relocation efforts will inevitably have a hard challenge from the community. At that time, in North Sulawesi and Manado, in particular, emerged many NGOs who eagerly championed the interests of the marginalized community groups. The protest of labor in Bitung City and Manado City and the many movements of the people, who demanded justice and their rights, at that time, made it not easy for the government to allow the investor to operate in Tatelu. Environmental issues in Buyat, Southeast Minahasa, caused by the operation of the Newmont mining company at the time were also often covered by local media in Manado and the national media. At that time, if the provincial government and the Australian company imposed to operate a mining operation in Tatelu, mobilization of people with NGO activists support would be easy to do to combat action. Finally, the company, namely P.T. Meares Soputan Mining, operates in the Likupang Sub-district of North Minahasa.

At present 150 mine holes can still produce even though not all are operated. From 1998 to 2010 there were around 3000 miners. As the mining hole deepens, the number of miners has decreased to less than 1000 people. In the mining area, there are around 70 gold processing workshops (GPW). Because of the uncertainty in getting gold, both mine holes and workshops do not always operate regularly except mine holes and the GPW owned by entrepreneurs with large capital. At present, there is Batu Emas cooperative whose members are 50 gold entrepreneurs. This cooperative was granted permission to mine by the government. Just by reporting to a cooperative manager, although not a cooperative member, every entrepreneur is allowed to run a mining business. Because it does not mine regularly, many small mining entrepreneurs do not register as members of the cooperatives.

The impact of mining activities in Tatelu is apparent in improving the social and economic welfare of the Tatelu people. In the time before

there was a mining activity most of the people's homes were traditional houses made of wood. At present most of the citizens' homes are made of concrete and not a few families who build a house with modern architecture. At present, the Tatelu village government office is the best in the District of North Minahasa. The church buildings are also very nice. The village market is open daily with buyers consisting of miners and residents. Indicators of Tatelu economic progress are the existence of a village market that is open every day, two minimarkets which are part of the national network, two banks, and one pawnshop. Gold mining has made the village of Tatelu like a small town.

ACTORS IN THE MINING AREA IN TATELU

As an arena, there are several actors in the Tatelu mining that are important for mining activities. To understand the relationship between actors, it can be distinguished between imperative-instrumental actions and strategic-instrumental actions. For example, the relationship between the funder and the landowner, or with the miner, is a form of imperative-instrumental action. But whether funders choose to employ miners from the Minahasa or Sangihe-Talaud tribes is a form of instrumental-strategic action. To maintain or enhance its business the funder or landowner must be able to take appropriate strategic-instrumental actions. For the sake of security and smooth running of the business, funders from the Sangihe-Talaud tribe prefer to employ miners from the Sangihe-Talaud tribe. Chinese mining entrepreneurs chose to buy mining land and not lease their land to other funders, as did Tatelu landowners. Chinese entrepreneurs also rely more on the police to secure their businesses. The discussion of the actors in this section is more about the instrumental-imperative actions of the actors, the discussion of the instrumental-strategic actions is in the next two sections.

The actors are as follows: The first is the miners whose main job is digging a mine hole and picking up gold ore. Most miners are migrants from various ethnic groups in North Sulawesi: Sangihe-Talaud ethnic from the Sangihe-Talaud archipelago; Bolaang-Mongondow ethnic from Bolaang-Mongondow region. Most of the Minahasa people who became miners came from outside the Tatelu, for example from the District of Minahasa and District of Southeast Minahasa. They are experienced miners in Bolaang-Mongondow, North Sulawesi, Central Sulawesi, and Eastern Indonesia. In recent times there many Sundanese miners from

the Province of West Java. The Sundanese miners were brought in by Chinese businessmen to mine in deep mining holes because other miners lacked the courage to do so. Because it is far from his hometown, miners from West Java are far easier to control by employers if compared to miners from other regions. In carrying out their work, the miners form work teams whose members usually have the same ethnic background. This background similarity facilitates cooperation and can prevent misunderstandings in communication. Besides coordinating the tasks, the team leader also communicates and negotiates with funders.

Miners generally obtain knowledge and skills in mining through practical experience without passing through the formal education process at school. Miners vary in their ability to mine and in their patterns of behavior and language because they come from different ethnic backgrounds. At the beginning of mining activities in Tatelu, these miners work for themselves, not working for others who have the capital. This is because at the beginning of mining the activities do not need a considerable cost. Simply dig a hole one or five meters can already get gold ore. Now, the miners have to work for other people, namely funders who have capital, because to be able to get gold ore people have to dig mining holes as deep as 30 to more than 100 meters which requires a large enough cost.

The second is funders. Funders are mining entrepreneurs by hiring miners. Funders use their capital to buy equipment, pay miners, finance the living cost of miners, provide loans to meet the daily needs of the miner's family, and pay transportation costs from the miner's hometown to Tatelu. Mining wages are given in the form of profit-sharing where the miners get between 75-80% and the funders get between 20-25%. This percentage of profit-sharing varies by agreement before the mining work begins. Although there is a profit-sharing agreement before the mining work begins but, in reality, the profit share may change according to how much gold it earns. If the gold proceeds a bit then the funders will take a smaller share than the initial agreement while the miners take a larger share than the initial agreement. There is a moral economy in the relationship between funders and miners so that each party does not feel the loss and the relationship between the two can continue. Funders usually get miners through the social network of miners or social networks of the funders. Through these social networks, funders can get skilled, experienced, and trustworthy miners. Most of

the funders came from Tatelu village, others came from outside such as Manado, Bolaang-Mongondow, Sangihe-Talaud, and Java.

The third is landowners. The meaning of landowners here are people who rent their land to funders to be mined or for the establishment of GPW. The mining area in Tatelu is 50 hectares owned by 34 people. Before there are mining activities, the landowners depend on their income from the coconut harvest every three months. Because the price of coconuts fluctuates and is less profitable, they decided to rent their land to be mined. The owners of this land earn income in the form of part of the gold ore that was successfully mined by the funder. At Tatelu, there is a convention that for 13 sacks of gold ore landowners get three sacks. This convention came into force since gold mining activities at Tatelu began to be orderly and stable. The landowners also rent some of their land for the establishment of GPW with monthly payments. The cost of renting land for the establishment of a GPW ranges from 750 thousand IDR to one million IDR a month.

The fourth is the owners of GPW. There are simple GPW and some are modern with gold processing machines with a high capacity. Simple gold processing machines and equipment are commonly made in Tatelu by workshops that run their business at the mine site. Modern processing machines are imported from abroad. The largest and most modern workshop owner is a Chinese entrepreneur who came from outside Tatelu. The processing cost is calculated per package where each package is 100 sacks. The cost per package depends on the agreement. But in the end, the amount of payment can change depending on how much gold each pack produces. If the gold is little, the workshop owner is willing to be paid less than the agreement or the lack of it can be paid later. The important thing is the workshop owners do not lose and still get the workshop operating costs. Willingness of the workshop owner to be paid later is considered as part of the service provided to his workshop customers. The main cause of wage variation on the miners and the payment of the processing cost of gold ore on the owner of the workshop is the uncertainty of the percentage of the gold produced from gold ore.

The fifth is the government or state. There are several levels of government. The village government is politically autonomous because the village head and members of the village representative body are elected by members of the village community. Then there are sub-district governments, district governments, provincial governments, and the central (national) government. The central government and

the provincial government lack an important role in determining the dynamics of mining activities. The central government only issues laws related to ASGM only. District governments alone have an important role in influencing the dynamics of the mining of Tatalu. District governments are represented by mining offices, labor offices, and environmental offices. Officials from these agencies carry out periodic supervision of problems relating to the environment and labor. Sometimes these agencies also conduct training on occupational safety and environmental pollution control. Then there are the police. The police force deals with security and order issues. The police are usually asked for assistance by the village government to deal with security and order issues if the village government is unable to deal with it alone.

CAPITAL, STRATIFICATION, AND MOBILITY

At the beginning of mining initiated, socio-economic stratification among actors or entrepreneurs was not so visible. Equipment used for mining and gold processing machines is still simple and the price is relatively cheap. The difference between miners, funders, owners of gold processing plants, and landowners is not very visible. The expression of the welfare of the villagers who work in the mines is also not too distinguishable difference. For example, most of the residents of his house are still made of wood and car ownership is also still small. Because the hole that must be mined to get gold ore is getting deeper and deeper, the socio-economic stratification among the miners, funders, owners of GPW, and landowners is increasingly visible. There is upward mobility among miners where there are miners who later increase to become funders after collecting a sum of money for capital. Some funders are increasing to become owners of GPW. Landowners who have managed to raise capital then become funders and owners of GPW. Then there is the difference between small, medium, and large gold processing workshop owners.

Most actors who are directly involved in the mining activities described above at this time have occupied some status and played several roles at once. Among them are the persons with the status of a funder as well as the owner of the workshop; some people are also at the same time as a funder as well as the owner of the factory and the landowner. The largest number is a status as a miner only and the smallest number is the status of landowners only. The person who

was originally a miner then became a funder and the GPW owner was the one who experienced upwards vertical mobility. Some funders went bankrupt due to failure to get gold ore even though the hole has been dug very deep. He experiences downward vertical social mobility. Upward and downward mobility is closely related to the ownership of economic capital, social capital, and cultural capital. In the Tatelu mining, upward mobility occurs because people have a lot of economic, social, and cultural capital. Downward mobility or bankruptcy can occur because people have little economic, social, and cultural capital. The following will describe how the relationship of economic, social, and cultural capital in the process of mobility among entrepreneurs.

Being a miner requires courage to enter deep hole and knowledge and skill of how to find gold veins and to mine them. Courage, knowledge, and mining skills are a form of embodied cultural capital. In the ASGM of Tatelu, such cultural capital is not obtained through formal education in schools. One can gain cultural capital by working directly as a miner. Freddy Areros has been a miner since 1999 in Tatelu. His father who also worked as a miner in Tatelu allowed him to learn a lot about mining. His success in raising capital from the mining business enabled him to become a funder. As a funder, he employs miners from the Sangihe-Talau ethnic. Because of his experience as a miner, he is difficult to be deceived by the miners he hired and also able to how to overcome the problems that occur in mining. His success as a funder encourages his desire to build a GPW to avoid reliance on other workshop owners to process his gold ore. The workshop was built a little slow starting in 2013 and completed in 2016. Some of the capital was used to build the workshop borrowed from gold traders operating in Tatelu. For him, dependence on other workshop owners can hamper his business because it often appears tension with the owner of GPW if the gold is too little. With too little gold results can make it unable to pay the miners and GPW owners. This sometimes causes tension with the miners and the GPW owners.

Freddy rented land owned by Tatelu's person to build his workshop. The workshop is only used to process gold ore which is mined from his mine hole. He does not accept the work of processing gold ore belonging to others for fear of misunderstanding. He feels that a misunderstanding can lead to a conflict that makes him feel insecure in running his business. He is worried that if there is a conflict, the workshop and workers will be disturbed. Freddy is a person from the Sangihe-Talau

tribe and lives in the city of Manado. As a Sangihe-Talaud person and a member of an ethnic minority group in the village of Tatelu, Freddy has the limited social relations or social capital. As a Sangihe-Talaud person, he also has limitations to recruit miners from other ethnic groups. This is what causes him to feel that if there is a conflict with Tatelu people he does not get social support from Tatelu people. Therefore, it can be stated that the limited social capital owned by Freddy is a limiting factor for the progress of its business.

Joshua's experience is different from Freddy. Joshua Rumokoy is a native of Tatelu village and is also a Minahasa person. Joshua is a graduate of a bachelor who works as a consultant to a property company in Manado City. Because he has enough capital, he seeks in mining by becoming a funder, without becoming a miner earlier. To overcome the difficulties in processing gold ore, Joshua built a gold processing workshop. As a native of Tatelu, he employs miners from Minahasa, Bolaang-Mongondow, and Sangihe-Talaud. He also accepted the work to process gold ore belonging to other funders. He is not too worried about the possibility of a conflict that can disrupt the smooth running of the business. As a native of Tatelu, he has many social relationships that allow him to get social support in case of conflict. The miners from Bolaang-Mongondow and Sangihe Talaud were reluctant or afraid to commit acts that harmed him. His extensive social network with other funders makes it easy for him to get gold ore processing work in his GPW and to get workers and miners when he needs it. Easily he can contact the funder with his mobile phone for help finding the miners in times of need. With a mobile phone, he can easily get orders to process gold ore from other funders.

In terms of experience in the mining business, Joshua has less experience than Freddy who has more than 15 years of experience. However, because Joshua's status as a resident of Tatelu, which means having a lot of social capital, can compensate for his shortcomings in the mining business experience so Joshua can continue to run his business. Similar to Freddy, Joshua also had no land so he had to rent land to mine and establish the GPW. At the time of the interview, he was in his workshop that is processing Harley's gold ore, the land, and workshop owner whose workshop is processing a lot of gold ore. Every three days Joshua exercises control over the miners and workshop workers. He can do that because he already trusts his miners and workers.

At Tatelu, there are several funders and GPW owners whose capital and GPW are smaller. Their business activities sometimes pause due to limited capital. The small amount of gold in gold ore that has been processed can cause losses and run out of capital. The amount of mining costs and the small gold yield from gold ore is the cause of the difficulty of small entrepreneurs to maintain their business. Like Arfan Mamonto and Sarmin as funders and GPW owners, at the time of this research, their business was temporarily stopped because they had difficulty getting miners and did not get jobs to process gold ore in their GPW. At that time, there were also some mining holes and GPW that were left by the owner without operating. But some entrepreneurs start their businesses only by relying on a large amount of money capital without experience in mining which eventually goes bankrupt because the mine hole that they dig does not produce gold ore at all.

In contrast to Freddy and Joshua, Harley Sondakh owns land that is quite large and is leased for mine holes and the establishment of GPW. There are more than five entrepreneurs who rent land to Harley to be mined and set up GPW. Harley himself also has his mining hole and GPW. As the owner of the leased land for mining holes, he can get three sacks of gold ore for every 13 sacks obtained by the funders from one mining hole. As the owner of the leased land, Harley earns more income from each tenant of his land for one mining hole. Income is even greater because Harley also leases his land to be used as a place of establishment of GPW. Like the landowners in Tatelu, Harley can quickly raise capital and become rich. With the capital he has, Harley set up a GPW to process gold ore obtained from the profit-sharing from the funders who rent the land. Sometimes the amount of gold ore he gained so much so that he must pay other GPW owners to process it.

Harley is a graduate of business school. As a native of Tatelu, Harley was appointed Chairman of Batu Emas Cooperative and became a member of BPD (Village Representative Body). As a member of BPD, he was appointed as its chairman. Harley has also been a member of the legislature (DPRD/Regional People's Representative Assembly) of District of North Minahasa in the period 2008-2014. Being a member of the legislature itself also shows that Harley is a fairly wealthy person because to become a legislator requires enough money to buy the votes of his constituents. As BPD Chair Harley also organizes funders and workshop owners in requesting the granting of a People's Mining Permit at Tatelu to the District Government. The permit application was

finally fulfilled by the District Government. Harley also often relates to the district, provincial, and national level officials associated with mining. Harley also often associated with NGO activists engaged in the environmental field. Harley's strategic position with his social network made him influential enough for miners and mining entrepreneurs.

The most successful mining businessman in Tatelu is Koh Daniel. He is a Chinese descendant from Manado City. He was a miner at the beginning of mining activities. Having succeeded in accumulating capital he then became a funder by employing miners. Having worked as a miner for a long time, he has enough knowledge and expertise to mine and take care of the miners who work for him. Because he believed that his mining business in Tatelu had good prospects, he decided to build a GPW. His modern GPW is equipped with a gold ore processing machine with a large production capacity and a fast process. The workshop is the largest and most modern workshop on Tatelu. Unlike other entrepreneurs' GPW in Tatelu, the workshop was built with large concrete construction. The workshop is equipped with a pretty good office. He also received orders from the funders who want to process the gold ore in his workshop. The cost to process gold ore at the workshop is relatively cheaper than other workshops. To keep his workshop and office secure, Daniel hires security guards who are always on guard. The use of this security force was based on the fact that as a Chinese he felt less secure. The use of such security forces is not carried out by other mining entrepreneurs. To expand its business, Daniel bought a fairly large piece of land on Tatelu from a landowner who had lived outside Tatelu for a long time. The land is used alone to be mined without being rented out to other entrepreneurs.

As a Chinese, Daniel employs miners from the Minahasa, Bolaang-Mongondow, and Sangihe-Talaud. Miners from Minahasa, Bolaang-Mongondow, and Sangihe-Talaud usually return to their hometowns for a relatively long time to rest and visit their families and relatives. For the funders, such habits can be detrimental because it interferes with the work of mining. To ensure that its business runs well, Daniel employs Sundanese miners from West Java Province. West Java can be said far enough distance from Tatelu. The miners from West Java are contracted per year. Daniel provides travel fare from West Java to Tatelu and from Tatelu to West Java. In contrast to other entrepreneurs, in paying wages to the miners Daniel using the payment system by combining fixed wages and premiums. This payment system allows a

more rational relationship between him and the miners so that mining activities can run smoothly without much friction.

From the above description, it appears that the position of mining entrepreneurs in the mining of Tatelu initially relatively the same. However, in subsequent developments, the positions of the mining entrepreneurs in Tatelu began to show the difference. Thus began to emerge socio-economic stratification among entrepreneurs. This happens because the longer the mining hole deeper to be able to produce gold ore that makes the mining business needs greater capital. The low position of entrepreneurs is occupied by funders, such as Calvin who managed to become a funder after accumulating capital from his income when he became a miner. He has a cultural capital of knowledge and skills in mining. With that capital, he managed to raise the economic capital to become a funder. The next position, the middle position, was occupied by the funders who also had the GPW such as Joshua and Freddy. Joshua started his business with his economic capital to become a funder, which later increased and eventually owned the GPW. In contrast, Freddy possessed a cultural capital in the form of knowledge and mine skills, which then succeeded in accumulating economic capital into a funder, and then establishing a GPW. Joshua is luckier than Freddy because Joshua has a lot of social capital. After all, he is a citizen of Tattle village, while Freddy is outsider Tatelu. This makes it easier for Joshua to run his business. The top position is occupied by funders who own a gold ore processing workshop and also own land, such as Henry and Village Head. The Village Head is also the landowner as well as the funder and workshop owner. Economically the highest position is occupied by the entrepreneurs whose land and workshop are the largest, such as Daniel. It can be said that from an economic point of view, the incumbent is Daniel but from a social point of view, the incumbent is Harley and the Village Head. While the challengers are entrepreneurs like Freddy and Joshua.

WEAK STATE CONTROL AND CAPITAL CONCENTRATION

The Act No. 4 of 2009 on mining and Government Regulation No. 22 of 2010 on mining stipulates that the maximum depth of mine hole in artisanal mining is 25 meters. What happened in the Tatelu mining is different from the laws and government regulations. Most of the mining

holes are more than 25 meters deep. Some of the mining holes are more than 100 meters deep. Digging a mining hole of less than 25 meters is difficult to get gold ore. In the 1990s, mining holes did not need to be deep. There was at that time there were miners who could get gold just by digging a hole one meter deep. As said by Calvin, a funder: “At this time, it is very difficult to get gold with holes as deep as five meters” (interview, 3/10/2017). Although it has violated the depth of the hole set by the government, it seems that until now there is no government effort to reprimand the perpetrators of such violations and sanction the law. Violation of this regulation seems to have been regarded as the usual thing by the police, mining entrepreneurs, and other officials associated with the mine. When asked to Harley why it was as if the violation was silenced by the village administration, he replied: “How to forbid it, this is the source of the livelihood of the villagers.”(interview, 25/10/2017)

As part of the village government, Harley should have enforced the government limitation of hole depth. But Harley, even the Village Head, did not try to enforce the rule. This is understandable because Harley and the Village Head themselves is also the owner of the workshop and the funder and lease the land for the establishment of GPW and the mining holes to other entrepreneurs. If control of the depth of the mine hole is done then it is likely that the overall mining business will decrease due to excavation of hole up to 25 meters can no longer get gold ore. Enforcement of the rules is equivalent to disrupting the sustainability of their businesses, and most likely will also get resistance from most of Tatelu Village residents who currently depend heavily on mining. As a result of mining activities in Tatelu, the progress of Tatelu village is socially and economically quite spectacular as shown above. “Only people who do not want to work earnestly that the welfare of his life did not make significant progress”, said Andre (interview, 9/10/2017).

Officials from the mining and police departments also have difficulty in controlling and knowing the depth of the mine hole as it must enter into a deep hole. There were never district government officials, provincial government officials, and police who controlled the depth of the hole by entering a hole. The officials were afraid to enter the mine hole because of the risk of being faced, for example, a mine hole collapsed. However, the mining and police departments know that the hole has exceeded the limit set by the government. Police know there is a violation of the regulation because there are also some police who also became funders and have a GPW. In Tatelu, there is also an

entrepreneur who owns a GPW that employs unofficially police to keep his GPW and holes to ensure the sustainability of his business.

The police also became ambiguous because the police often get money from entrepreneurs for social activities conducted by the police. Even at certain times, the police may seek financial assistance to the mining entrepreneurs. This makes the control of the hole depth limit is never done seriously. There appears to be a tacit agreement on the violation of the mine hole depth limit between the state apparatus and the village government apparatus as well as the big entrepreneurs because they can gain profit. Weak state control over violations of the depth of the mine hole has made it deepen and mining costs are increasingly expensive. In the end only mining entrepreneurs with large capital and own land like Harley, a village head, and Daniel who can continue the mining business. According to the information provided by the village head, now the landowners are not willing to lease the land on the funders whose capital is small (interview, 29/9/2017). The landowners know that renting out the land on funders with small capital is less profitable because land rental costs are paid in the form of part of gold ore results that have been mined. While entrepreneurs with small capital will not be able to produce gold ores continuously and in large quantities, even sometimes his business stops for some time because of running out of capital. At the time of data collection, there are dozens of nine holes and the GPW is stopping operation. It happened because the owners had trouble getting the capital to pay miners and also did not get the job of processing gold ore.

CONCLUSION

ASGM in Tatelu forms an arena in which each actor competes for economic gain through mining operations. Initially, the economic position of mining entrepreneurs is relatively similar. In subsequent developments began to emerge economic stratification. The position of entrepreneurs on the stratification ladder is determined by the economic capital, social capital, and cultural capital. The lowest position of entrepreneurs is occupied by entrepreneurs who only play the role of the funder. The position of middle entrepreneurs is occupied by entrepreneurs who become funders and have a workshop. The high position is occupied by entrepreneurs who become the funders who also own the land and the workshop. The field of ASGM Tatelu can

survive until now due to violations of the maximum depth limit of mine holes obtained tacit approval among officials of the village government, district governments, provincial governments, and police. In the field of ASGM, the economic capital is a more decisive factor than the cultural capital. It is different from the field of ceramic craft industry where cultural capital is a more decisive factor in achieving success (Purwanto 2017). It can be argued that Bourdieu's view of the field was more in line with the reality of the ASGM field than Fligstein's view. Bourdieu's view of the field shows that actors have less freedom or less agency capacity than Fligstein's. Data shows that in the ASGM field at Tatelu it is very difficult for entrepreneurs with small economic capital to climb the ladder of social stratification. They have limited strategic-instrumental actions choice. Only at the beginning of the emergence of mining did entrepreneurs with small economic capital have the opportunity to climb the stratification ladder. As the cost of mining is increasingly expensive, it can be predicted that entrepreneurs with small economic capital will have difficulty surviving.

REFERENCE

- Abrutyn, Seth, ed. 2016. *Handbook of Contemporary Sociology*. Switzerland: Springer Publishing
- Astuti, W. F. 2015. "The Impact of Illegal Gold Mining on the Welfare of Gurandil Household." *Thesis*. Bogor: Department of Communication Science and Community Development, Faculty of Human Ecology, Bogor Agricultural University.
- Biggart, Nicole Woolsey, ed. 2001. *Economic Sociology: A Reader*. Malden, Massachusetts: Blackwell Publishers LTD.
- Bourdieu, Pierre. 2001, "Forms of Capital" Pp. 280-291 in *Economic Sociology: A Reader*. Malden, Massachusetts: Blackwell Publishers LTD,
- Bourdieu, Pierre and Loïc J.D. Wacquant. 1992. *An Invitation To Reflexive Sociology*. Chicago: the University of Chicago Press.
- Cartier, Laurent E., and Michael Bürge. 2011. "Agriculture and Artisanal Gold Mining in Sierra Leone: Alternative or Complement?" *Journal of International Development* 23:1080-1099. DOI: 10.1002/jid.1833
- Coleman, James S. 1988. "Social Capital in the Creation of Human Capital," *American Journal of Sociology* 94:95-120. DOI: 10.1086/228943

- Coulibaly, O. 2017. "the Socio-Cultural Organization of Artisanal Gold Mining and Its Impacts on the Local Livelihood." *Thesis*. Norway: Department of Archeology and Social Anthropology, Faculty of Social Science and Education, University of Tromso.
- Cuvelier, Jeroen, Koen Vlasseroot, and Nathaniel Olin. 2014. "Resources, Conflict and Governance: A Critical Review." *Extractive Industry and Society* 1(2):340-350 DOI: 10.1015/j.exis.2014.07.006
- Dondeyne, Stevan and Eduardo Ndunguru. 2014. "Artisanal Gold Mining and Rural Development Policies in Mozambique: Perspectives for the Future," *Journal Future* 62:120-127 DOI: 10.1016/j.futures.2014.03.001
- Fligstein, Neil. 1996. "Market as Politics: A Political-Cultural Approach to Market Institutions," *American Sociological Review* 61:656-673. <http://www.jstor.org/stable/2096398>
- and Doug McAdam. 2012. *A Theory of Field*. New York: Oxford University Press.
- Gamu, Jonathan, Philippe Le Billon, and Samuel Spiegel. 2014. "Extractive Industries and Poverty: A Review of Recent Findings and Linkage Mechanisms," *The Extractive Industries and Society* 2(1):162-176 DOI:10.1016/j.exis.2014.11.001
- Granovetter, Mark. 1985. "Economic Action and Social Structure: the Problem of Embeddedness," *American Journal of Sociology* 91:481-510 <http://www.jstor.org/stable/2780199>
- Grätz, Tilo. 2009. "Moralities, Risk and Rules in West African Artisanal Gold Mining Communities: A Case Study of Northern Benin." *Resources Policy* 34:12-17 DOI: 10.1016/j.resourpol.2008.11.002
- Harianja, Alfonso dan Asep Sukmana. 2014. "Korelasi Pertambangan Emas Tradisional terhadap Keadaan Sosial Ekonomi Masyarakat: Kasus di Kabupaten Madina, Sumut." Paper from A Conference.
- Haridison, A. 2013. "Perjuangan Masyarakat Lokal dan Usaha Memberdayakan Diri: Studi Kasus Pertambangan Emas Rakyat di Merindu, Desa Konut, Kabupaten Murung Raya." *Kritis: Jurnal Studi Pembangunan Interdisipliner* 23(1):41-61.
- Hilson, Gavin, and Clive Potter. 2005. "Structural Adjustment and Subsistence Industry: Artisanal Gold Mining in Ghana." *Development and Social Change* 31(1):103-133. DOI: 10.1111/j.0012-155x.2005.00404.x

- Kluttz, Daniel N., and Neil Fligstein. 2001. "Varieties of Sociological Field Theory" pp. 185-204 in *Handbook of Contemporary Sociology*. Switzerland: Springer Publishing.
- Kouame, K. J. A., Fuxing Jiang, Yu Feng, and Sitao Zhu. 2017. "A Study on Ivory Cost with Impacts of Artisanal Gold Mining on Local Livelihoods and the Mining Industry." *Advanced Engineering Forum* 20:68-77. DOI: 10.4028/www.scientific.net/AEF.20.68
- Lamont, Michele, and Annette Lareau. 1988. "Cultural Capital: Allusions, Gaps and Glissandos in Recent Theoretical Development." *Sociological Theory* 6(2):153-168.
<http://www.jstor.org/page/info/about/policies/terms.jsp>
- Langston, James Douglas, Muhamad I. Lubis, Jeffrey A. Sayer, Chris Margules, Agni Klintuni Boedhihartono, and Paul H.G.M. 2015, "Comparative Development Benefits from Small and Large Scale Mines in North Sulawesi, Indonesia." *The Extractive Industries and Society* 2(3):434-444. DOI: 10.1016/j.exis.2014.11.001
- Marshall, Bruce G., and Marcello M. Veiga. 2016. "Formalization of Artisanal Miners: Stop the Train, We Need to Get Off!" *The Extractive Industries and Society* DOI: 10.1016/j.exis.2017.02.004
- Mkodzongi, Grasian, and Samuel Spiegel. 2018. "Artisanal Gold Mining and Farming: Livelihood Linkages and Labor Dynamics after Land Reform in Zimbabwe," *the Journal of Development Studies* October:1-17. DOI: 10.1080/00220388.2018.1516867
- Purwanto, Antonius. 2017. "Cultural Capital and Business Success among Entrepreneurs." *Journal of Economics, Business, and Accountancy Ventura* 19(2):227-236.
- Putnam, Richard. D. 1993. *Making Democracy Work: Civic Traditions in Modern Italy*. Princeton: Princeton University Press.
- Saldarriaga, Adrian, Clara Villegas-Palacio, and Santiago Arango. 2013. "The Public Good Dilemma of a Non-Renewable Common Resource: A Look at the Facts of Artisanal Gold Mining." *Resource Policy* 18(2):224-232 DOI: 10.1016/j.resourpol.2013.02.001
- Sánchez-Vázquez, Luis, María Gabriela Espinosa-Quezada, and Maria Beatriz Eguiguren-Riofrio. 2015. "'Golden Reality' or the 'Reality of Gold': Artisanal Mining and Its Socio-Environmental Conflict in Chinapintza, Ecuador." *Extractive Industry and Society* :1-5. DOI: 10.1016/j.exis.2015.11.004
- Siegel, Shefa, and Marcello M. Viegá. 2010. "The Myth of Alternative Livelihoods: Artisanal Mining, Gold and Poverty," *International*

- Journal of Environment and Pollution* 41:3/4. DOI: 10.1504/ijep.2010.033236
- Siwale, Aghata, and Twivwe Siwale. 2016, "Has the Promise of Formalizing Artisanal and Small-scale Mining (ASM) Failed? The Case of Zambia," *The Extractive Industries and Society* 4(1):1-11. DOI: 10.1016/j.exis.2016.12.008
- Sullivan, Alice. 2001, "Cultural Capital and Educational Attainment." *Sociology* 35(4):893-912.
- Teklemariam, Selam. 2015, "Artisanal/Small-Scale Gold Mining Activity and its Role in Sustainable Livelihood of Rural Community." Paper Research, the Hague, the Netherlands: Institute of Social Studies. file:///C:/Users/Costumer/AppData/Local/Temp/TTeklemariam_moodledata_temp_turnitinto/ol_435164677_605_1447238087_3310.pdf
- Tenkorang, Emanuel Yamoah, and Patrick Osei-Kufuor. 2013, "the Impact of Gold Mining on Local Farming Communities in Ghana." *Journal on Global Initiatives: Policy, Pedagogy, Perspective* 13:25-44. <https://digitalcommons.kennesaw.edu/jgi/vol8/iss1/3>
- Tuaputy, Una Selvi, Eka Intan Kumala Putri, dan Zuzy Anna. 2014, "Ekternalitas Pertambangan Emas Rakyat di Kabupaten Buru Maluku." *Jurnal Ekonomi Pertanian, Sumberdaya dan Lingkungan* 1(1):71-86.