

## The Impact of Gold Mining Activities on the Environment and Community in Nagari Tambang, IV Jurai District, South Pesisir District



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**ABSTRACT:** Nagari Tambang has an area of 14.97  $Km^2$ . The population consists of 1,948 1,030 men and 918 women. Population density 130.12 per  $Km^2$ . The types of mining in Nagari Tambang are coal, gold, and sirtukil. The coal mine is no longer operating, but gold and copper are still active. The local community carries out this mining activity. Problem activity mining will have an impact: the increased threat of landslides, loss of ground cover vegetation, soil erosion, increased sedimentation, decreased water quality, reduced forest area due to mining that has penetrated the forest, seawater pollution due to coal barge loading and unloading activities, as well as impacts on existing biota around the sea. Meanwhile, the effects on society include Washing waste, hazardous substances for human health, and environmental damage caused by mining. Research methods carried out are quantitative. The research location is in Nagari Tambang, IV Jurai District, Pesisir Selatan Regency. The research population is people living in Nagari Tambang, IV Jurai District, Pesisir Selatan Regency. Samples were taken purposively. Research results: 1. The Impact activity mining gold on the environment is: decreasing the quality environment, because impact of mining gold carried by the people of Nagari Tambang. Such as: a). Morphology land changed namely: layers soil, color land, structure soil, and consistency land. b). River water discharge is reduced Because water catchment in the hills Already decrease and amount plants stand forests is also decreasing. c). Public health is disturbed, such as their skin becoming dry and itchy and there are problems with their breathing. d). Haven't done it yet waste water treatment remainder from the separation process gold with material other. 2. Impact activity mining gold to society: a). Decreased interaction social with the community, b) Many young people in Nagari Tambang do not continue education to Higher Education, c). Life public No increase in a way significant, because mining use method traditional Not yet there is a business entity.

**KEYWORDS:** Mining Gold, Environment and Society, community in nagari Tambang, south Pesisir district

### I. INTRODUCTION

Activity mining gold and *sirtukil* (Sand, Stone, and Gravel) in Nagari Tambang, IV Jurai District, Pesisir Selatan Regency needs serious attention so as not to jeopardize the sustainability of the existing environmental conditions in that place. Mining activities cause changes in landforms and soil quality. The soil cover structure becomes damaged because the topsoil is replaced by less fertile subsoil. Likewise, the biological population of soil in the topsoil becomes submerged, so that it disappears or dies and does not function as it should. As a result, the carrying capacity of the topsoil after mining is reduced growth of plants becomes low (1). Activity mining results in various changes environment, change: landscape nature, flora, and fauna habitat, structure ground, pattern surface water flow, and groundwater flow (2). That matter impact to intensity as well as diverse properties (3), and decreasing levels of sustainability resource nature (4). This matter happens Because the public does not do reclamation to land used mines (5).

Activity mining gold, sand, stones, and gravel impacts positive as well as negative. Impact positive, increasing income original area (PAD), open field work new or work side for the community ( Law No.4 of 2009 in article 3 and Prinando Vavo, et al, 2023), because public Work as miner gold, sand, stone, and gravel. There is income for owner land for sale or rented For mining . Temporary Negative impacts, many immigrants who come along mine often give rise to conflict. Apart from that, there is a sense of fear public local, impact mining potential landslide that impacts to land and settlements society (6). Happen damages the environment caused by the use of mercury For separate gold, lots of it carried out in mining gold scale society (7) (8) (9) (10).

The mining in Nagari Tambang, IV Jurai District, Pesisir Selatan Regency, is generally gold and *sirtukil* mining, while coal mining is no longer operational. Mining Lots carried out by the people in Nagari and the people around the Nagari. Activity mining risks damage to the environment, like the damaged ecosystem as well as the surrounding environment location mining (11). This is

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what makes it researcher interested do study regarding “ **Impact Activity Mining Gold to Environment and Society in Nagari Tambang, IV Jurai District, Pesisir Selatan Regency** ”.

## **RESEARCH METHODS**

Research methods carried out are quantitative. The research location is Nagari Tambang, IV Jurai District, Pesisir Selatan Regency. Respondent consists of public miners gold who live in Nagari Tambang, IV Jurai District, Pesisir Selatan Regency, meanwhile, the sample was taken purposively, that is as many as 63 respondents. Informants in research This is public miners taken using snowball sampling and key informants are Wali Nagari, Niniak Mamak, and collectors business mine gold. Data source: primary data from a questionnaire, as well as results interview . Initial data processing uses descriptive and continues with qualitative To strengthen results study quantitative as well as be equipped with documentation and observation results.

## **RESEARCH RESULTS AND DISCUSSION**

### **Condition of Mining Village**

Nagari Tambang has a very diverse geographical shape, ranging from land, hills, valleys, and rivers. Nagari Tambang has the boundaries of Nagari: next door north borders with Nagari Koto Rawang, to the south, it borders with Nagari Bunga Pasang, to the west, it borders with Nagari Ampang Tareh Lumpo, and to the east it borders with Batang Cotton.

Nagari Tambang is in the Capital Region of Pesisir Selatan Regency with an area of 554.2 Ha. The Nagari Tambang Government Center is located in Tambang Nagari Tambang Village, IV Jurai District. The physical factors required by nature to plan an area are topography, geology, hydrography, and physical constraints. Nagari Tambang is plain currently with hills with a slope  $40^0$  and average daily temperature  $29^0C$ . Resource social and cultural aspects in Nagari Tambang include: cooperation that is carried out every month, folk festival or harvest Raya is carried out every year, clean up Nagari is done every 2 years, and balimau paga is done every year.

The people of Nagari Tambang have a creative life that is nuanced with religious, social, and cultural values. The life of mutual cooperation and interaction with fellow citizens is still closely embedded in the life of the people of Nagari Tambang. The main livelihood of the community is farming, which produces agricultural products such as Food crops, and horticulture, and plantation crops such as durian, gambier, coffee, rubber, cacao, and other crops that provide economic growth. Apart from that, as miners gold traditional, breeders, and so on.

### **History of Nagari Tambang**

This Nagari Tambang did not just happen, but through natural rules and processes, according to the adat "kok ketek nan balingka Tanah, gadang nan balingka adat" After the expansion, Nagari Tambang was divided into 3 Kenagarian namely Nagari Koto Rawang, Nagari Salido Sari Bulan and Nagari Tambang . Nagari Tambang consists of three tribes, namely the Malay, Tanjung, and Caniago tribes. Each tribe is Bapandam Baaturan, Basasok Bajarami, Basasah Baladang, Baranak Bakamanakan and others. Ninik mamak in Nagari Tambang moment This there are 7 people with use rule custom each other Nagari” buk malangka kampung” ownership land namely: land customary law people, land customary law tribe and land customary law Nagari.

Nagari Tambang was once a Dutch Colonial gold mining area, so the people's work activities at that time as gold mining workers, to this day, can still be seen from the tunnels and debris of the former gold processing factory. The residents of Nagari Tambang come from Lumpo and Bayang but generally come from Darek Koto Anau. When they arrived at the mine, they saw that the 5667 Salido rate bar was cloudy, so they walked towards the north and then they sat on Batu Hampa Lubuk Emas (because the stones where they sat were spread out). The origin of the word Lubuk Gold is Because deep This rope has 5667the lowest mass rate ( collected ) but has not been processed until now.

### **Mining Society Gold**

Mining gold carried by the community is one sector of industry mining, which is increasing due to need as well as request in a way simultaneously with growth as well as well-being public local. Activity mining gold is done public in a way together or group to-location mining. Local mining is located in the hills of Nagari Tambang. Mining No Can done in a way individually because location mining is located on a slope and must be dug moreover formerly before entering into in hole. Depth already estimated public Already can take material mine in the form of stones, gravel containing gold. The hole was sometimes not vertical will but someone turned. Because of that's it, miner gold has a group that is solid, unified, trusts each other, and is not allowed important interests personal as well as brash, here is the agreement before mining to Hill. Because it's deep activity taking material very risky to mine inside hole mine gold. Gold mine This is a mining society that doesn't have a guarantee that a disaster occur if false or No contact with the team, this is very affecting comfort inside the whole mine. After emitting results, the mine uses a sack that has been prepared, and then the results are shared in a way fair and good. Transportation results in mines that have been entered into in sack and taken with you using a motorbike from the hill, by each group.

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Group miners get each ingredient mine gold, and then bring it to respective homes for processing with the use machine with the help sanio and others , so the materials brought separated between gold and not gold ( Sand, tin, bauxite, etc. ). The rest of the discarded material is still being sold for IDR 60,000 per sack, some people can accommodate it, because it contains iron, tin, and other elements.

Gold mining has long been carried out by the Nagari Tambang community , 38% stated public has more than 10 years and less than 10 years as much, and 62%, of that public has been mining gold This Already more than 5 years. Activity miner carried out by the community most more of 4 days / week namely 87.30%, only 12.70% did it activity mining a maximum of 4 days/week, that is public almost each day mining For fulfill need his life. Because of the results from mining gold This more promising for they For embellish his needs . Although work as farmers others Already they make it income side. They more importantly Fast results can be obtained and the price is also high . This matter by its height statement public that: income received from mining is Already Enough To fulfill needs life they namely: 87.30%, only amounting to 12.70% statement public that income earned is Still not enough For fulfill need his life, p This happen Because this respondent received wages from other miners and he worked with other people, not on his own.

Many people No sight impact of mining their gold do it because society hangs its life from the results search gold. Mining gold This Already is the income main people , while additional income comes from farming, going to the fields, selling, carpentry, and others. Neither do the people of Nagari Tambang sigh with exists transportation material mining carried out by groups of miners, because the mining materials they carry are Already wrapped in sack, so reduces the impact of dust material mine that they bring to each other's houses. This matter is contradictory with (12), that mining can bother to balance the environment from activity exploitation, processing or purification, and transportation. According to (13) mining gold can damage land, so happen pollution the environment, and threaten the safety of workers and society around mining.

Activity mining in Nagari Tambang, only mining gold (Excavated Materials B) carried out by the community local area around Mineral B. In this case, the materials mined on the hill contain gold, nickel, and silver, but the community Is Not interested in processing them. Meanwhile, Mineral B is material excavation that can be done ensure desire the lives of many people (14). According to miners with only process gold just Already profit because Mark sells gold high in comparison to Mark's nickel and silver, activity mining this, not bother community life because no one is harmed from activity mining gold. Community together Work as miner gold generally, for get source income main. Apart from that, mining is not carried out in locations where people live, but in the hills in Nagari Sungai Tambang. This is evident from the answers public that activity mining gold No bother life society , that is amounted to 50.79% whereas influence environment amounting to 49.21%. That is, miners consider that their activities do Not yet influence the environment. In terms of, several past research records There are several social, economic, and cultural conflicts regarding the consequences of PETI which affect the welfare of society (15), Nyame & Grant, (16), Plummer (17), Crawford and Botchwey (18). Activity mining is done from Morning day until the afternoon, meanwhile, its processing can adapt to time mining. Usually, miners will do it during the day until the afternoon. This matter cause reduced miner do interaction with public around nor with his family . Because they are Busy with activity routines each day as mining gold. Many young people have an opinion No need continuing education to a higher level high , provided diligent mining can also be done For fulfil need life daily. This matter proves that a few people living in Nagari Tambang arrived at College. This thing , became the reason for the low knowledge and understanding they related to the marriage process gold and processing waste-friendly environment. According to a study by Lutvi (19), the activity processing gold use method amalgamation with the cyanidation process hurts water and sediment quality at the site processing.

Intensity mining carried out tall that is as much as 74.60% of answer respondents, while the intensity mining low only 25.40%. This means that many people are mining for gold in Nagari Tambang. Gold mining is carried out by the community To fulfill the economy family, get knowledge to mine from parents, relatives, and also friends who already have started mining moreover formerly. Preparation of the required mining equipment that will be used in the form of a simple water pump machine is useful for sucking up the water in the hole made for entry to land. Hammers, hoes, crowbars, flashlights, and other simple tools are useful for supporting the excavation and extraction of gold mining materials. All equipment For mine It has been prepared by the group miner before they leave to Hill . Need There is good and clear communication related to the distribution of preparation materials and tools this, because it is very influential to readiness mining, as well need there is a mutual feeling of trust, unity, and help inside group mining. If the intensity of mining carried out public Keep going increases, then will impact happen landslide, like happen floods and landslides in the Regency Luwu started from opening land For mining gold on Mt Latimojong, as many as 13 sub-districts affected, (20).

Impact of mining activities on soil and river water morphology. According to the community, the impacts they feel are related to the morphology of the land and river water mining carried out. Respondents stated impact small as many as 44.44% and 55.56% said impact big. This means that many of the people of Nagari Sungai Tambang feel the impact of mining from facet morphology land like changes in soil layers, soil color, soil structure, and soil consistency. Initially, the hills were covered with various types of forest plants, but after that... exists mining gold, has changed It has become land that is difficult to grow plants because there has

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been no treatment from the community in cultivating ex-mining land. Meanwhile, the impact of mining on river water in Nagari Sungai Tambang is starting felt reduce the amount of river water discharge, because water catchment in the hills Already decreased and amount plants stand forests are also reduced, impact from there are several mining locations on the hills.

Influence activity mining to income society , results statement respondents as many as 57.14% said have income moderate and 42.86% stated their income was good. That is, after Lots society does activity mining but life they No increase significantly because people who carry out mining still use traditional methods by looking for rocks in the hills in groups and separating them gold with material other done in a way individually and not in groups or business entities. The rest of the material is not form gold is sold by the public with price IDR 60,000/ bag . This means that there is no public creativity to process remaining materials other than gold. The process starts from :

1. Smooth the containing stone gold
2. Enter material into in *dompeng* available
3. Turning on machine and water for processing
4. Enter material separator gold with material others ( mercury )
5. Separate ingredients
6. Gold is taken and materials others are for sale with a price IDR 60,000/ bag

People use mercury To separate gold , because Can dissolve various metals to form alloys or amalgams (21).

Road conditions in Nagari Tambang after exists mining gold , happens enhancement condition road become Good . Based on the statement respondents increased by 33.33%, p This happens Because mining gold does not damage roads, mining done on the hill uses motorbikes, as well processing is carried out in their respective homes, with method transporting only 1 or 2 sacks of material per person. Mining is done with a scale small or group small, as for separation of gold with material other in a way individually. Types of roads before mining: consisting of asphalt or concrete, dirt, and others. Meanwhile, after mining there was a change in road types, namely an increase in the number of types of roads in the form of asphalt or concrete, Again The road in Nagari Tambang is in the form of land. Enhancement condition road This is not from the impact of mining gold will but there is a government program For building Nagari through infrastructure, one of them access road.

Public Health Conditions, based on answers respondents exists enhancement public health conditions after mining in Nagari Tambang, amounting to 22.22%. It means with my gold public has income To fulfill the needs family from clothing and food so that health increases. The income public increases so that can fulfill the need for health form food healthy and nutritious. However Not only fulfillment need for His health just be an indicator health of public will but the impact of the separation of gold from material others is done at home, so estimated to have an impact on the condition health residents' House. From results, observations in the field that waste water separation gold from those who are not gold, thrown around House public only, without processing moreover formerly. This also lowers the quality surrounding the environment House society and impacts health. Respondent feels skin becomes dry and itchy and there are problems with his breathing.

Clean water conditions, based on the statement respondent , yes decline of 22.22% after exists mining gold , here happen Because respondents do separation gold on site House they . So waste water after the separation process is thrown away directly into the ditch without existing processing. For drinking water most public use drinking water fill repeat, meanwhile for bathing and washing public use well. Which become a problem in Nagari Tambang is waste water from the remainder of the separation process gold is thrown away around the House Already Of course will sink into the land and will impact on well water quality and the quality surrounding environment House the. Some documentation of the separation process of gold with material other as follows:



**Figure 1. Process of crushing containing rock gold at home public.**



**Figure 2. Separation process gold use machine mask and water on-site House public.**

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**Figure 3. A traditional machine that separates gold from non-gold.**



**Figure 4. Gold yield form powder , ready for sale .**

### CONCLUSIONS

1. The impact activity mining gold on the environment is: decreasing the quality environment because impact from mining gold by the people of Nagari Tambang. Such as: a). Morphology land changed namely: layers soil, color land, structure soil, and consistency land. b). River water discharge is reduced Because water catchment in the hills Already decrease and amount plants stand forests is also decreasing. c). Their public health starts disturbed , such as skin become dry and itchy and there are problems with their breathing. d). Haven't done it yet waste water treatment remainder from the separation process gold with material other.
2. Impact activity mining gold to society: a). Decreased interaction social with the community, b) Many young people in Nagari Tambang do not continue education to Higher Education, c). Life public No increase in a way significant, because mining use method traditional Not yet there is a business entity.

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