ARTICLE

Trading green for gold: The lived experiences of migrant indigenous peoples with large-scale mining operations in Runruno, Quezon, Nueva Vizcaya, Philippines

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ABSTRACT

Mining activities have affected rural communities in the Philippines for centuries. In the case of Runruno, indigenous peoples from various parts of northern Luzon migrated to the area as a response to a growing demand for workers in large-scale mining concessions. The researchers analyzed the lived experiences of migrant indigenous peoples as affected by large-scale mining operations. Using ethnographic methods, results revealed that the impacts of large-scale mining among the locals are relative. An individual's inherent condition in the community, such as power and socio-economic status, delineates the magnitude of such. These lived experiences shaped their collective perception of large-scale mining. In terms of economic benefits, a number of locals became employed in the company, but others suffered because small-scale mining was stopped.

Positive social impacts are assistance in healthcare and education, promotion of cultural identity, and capacitating locals through training as part of their Social Development and

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Management Program. However, the apparent environmental impacts were forest loss and water pollution. The onset of large-scale mining in Runruno has created rapid development which affected the lives of residents, more specifically the migrant indigenous peoples who rely on agrarian activities for their livelihood. The majority of respondents are seeking the closure of the mining company, in spite of the economic benefits and services provided by the mining company. Fairness in benefit-sharing is a pressing issue that should be addressed, as other residents are not satisfied with the initiatives of the company. With the possibility of ceasing extraction in the next few years, locals of Runruno are now confronted with a major socio-economic challenge.

INTRODUCTION

Mining, similar to other industries, depends highly on natural resources and labor. Across the country, mining concessions have sprouted, as a response to increasing demand for gold and other metals like nickel and copper. The 2018 data of Mines and Geosciences Bureau (MGB) stated that, in the Philippines, there are 48 metallic mines, 61 non-metallic mines, 5 processing plants and 3, 389 small quarries and sand & gravel operations covered by permits issued by LGUs (mgb.gov.ph). The country's mineral exports for the same year have an amount of US$ 4.26 Billion. Japan, Australia, Canada and China are the major countries of destination. In terms of employment, the mining industry has created 212, 000 jobs, also in 2018. Aside from the high demand, the laws of the Philippines on mining allow foreign investors to enter and operate independently. Financial or Technical Assistance Agreement (FTAA) which permits 100 percent foreign ownership of mining operations (Raymundo, 2014) gives exclusive rights to the company for the discovery, mining, use, processing, refining, marketing, transport, export and others.

In 1995, The Philippine Mining Act of 1995 or Republic Act No. 7942 was enacted. This policy oversees all mining activities of the country and also promotes rational exploration, development, utilization and conservation through the combined efforts of government and the private sector. Ultimately, this policy aims to enhance national growth in a way that effectively safeguards the environment and protects the rights of affected communities, which include ancestral lands and other upland communities (Raymundo, 2014). This law provides two approaches in forming and finalizing mining contracts namely: the Mineral Production Sharing Agreement (MPSA) and the Financial or Technical Assistance Agreement (FTAA) which permits 100 percent foreign ownership of mining operations (Raymundo, 2014). FCF Minerals Corporation falls under the second approach. The most recent policy change in the mining scene was the enactment of Executive Order No. 79 in 2012 or "Institutionalizing and Implementing Reforms in the Philippine Mining Sector, Providing Policies and Guidelines to Ensure Environmental Protection and Responsible Mining in the Utilization of Mineral Resources". This law ensures that environmental standards in mining, as prescribed by the various mining and environmental laws, rules, and regulations, shall be strictly implemented and appropriate sanctions will be applied for violators (Senate of the Philippines, 2012). In spite of the implementation of these policies about mining, it appears that the government still has a long way to go in its quest to achieve sustainable mining and social equity in the uplands.

In recent years, mining has gained a negative reputation due to a number of factors. In 2017, the Department of Environment and Natural Resources (DENR) ordered the closure of 23 mining operations as a result of their environmental audit. Large-scale mining companies like Ore Asia Mining and Development Corporation were the first to be closed (denr.gov.ph). NGOs and other conservation groups are also lobbying to stop the operations of these companies, primarily because of its negative impact to the environment and to human health. One good example is the cooperation between the International Union for Conservation of Nature- National Committee on The Netherlands (IUCN-NL) and ten local partner organizations to promote the amendment of certain policies. They successfully lobbied for some significant changes in Philippine Mining legislation, taking into consideration environmental, safety and human rights issues (Hilterman, 2015). Mining generates good income but it comes with a big price too. The opportunity costs of extracting gold are cleared forestland, polluted waters, degraded soil and higher susceptibility to erosion. This raises major concerns of ethical and social justice, as does the limited existence of mineral resources, which can mean that mining benefits are enjoyed by current generations, while future generations bear the burden of environmental and social effects that can continue well after the end of mining (O'Faircheallaigh, 2015).

The Philippines did not have a sophisticated set of policies about mining until the mid-1990s. In 1971, the Senate and Congress enacted Republic Act 6364, also known as the Gold Subsidy Law, to provide relief to gold producers by requiring the Central Bank to purchase newly mined gold from mining companies at a designated price (Chan Robles Virtual Law Library, 1971). On the other hand, those gold producers that did not receive subsidy through this Act can sell its gold production in the free market, whether local or foreign, as stated in Section 13-A. In around three years, Marcos issued Presidential Decree No. 463 or the Mineral Resources Development Decree of 1974. This acknowledged mineral production's contribution to the national economy, hence a need to intensify the discovery, exploration, development and wise utilization of the country's mineral resources are urgently needed for national development (Official Gazette, 1974). The "People's Small-Scale Mining Act of 1991," also known as Republic Act No. 7076, was passed in 1991. According to the law, the state must encourage, develop, preserve, and rationalize sustainable small-scale mining activities in order to provide more job opportunities and ensure an equitable distribution of the nation's wealth and natural resources, while taking existing rights into account (Senate of the Philippines, 1991).

Private sectors benefit and exercise their power mostly by profiting from economic exploitation of forests and, land but they are absent in public discourses within the community (Wong, et al., 2020). The lack of attention to social equity is also reflected in other forestry programs in general. While conservation strategies have sometimes achieved environmental objectives at the cost of equity considerations, the evolving conservation context and a growing body of evidence increasingly indicate that equity considerations should be incorporated into conservation planning and implementation. This is reflected by some projects concerning payment for ecosystem services (PES) schemes (Pascual, et. al., 2014). The absence of explicit benefit-sharing arrangements and rent-capture by elites, unstable ownership, and restricted use rights of forest resources were established as the key constraints to distributive equity (Kenfack Essougong, et. al., 2019).

In mining communities like Runruno, especially those linked with large-scale mining companies, social equity is a pressing issue that has to be tackled. Large mining projects can yield highly inequitable results, with impacted communities bearing the brunt of social and environmental costs, while domestic and international metropolitan centers primarily benefit from the economic benefits (O'Faircheallaigh, 2015). Aside from that, inequity in terms of who among the community members will

benefit from the project is another aspect. Hiring people on the basis of gender is common in mining companies. Women and people of different gender identity are one way or another discriminated against in jobs like these. Chaloping-March (2006) mentioned that the data of Lepanto Consolidated Mining Company in 2000 showed that only 3.85% of the total number of staff is represented by women, which constitute 81 out of 2,023 employees. A particular situation occurs with small-scale mining. Since it is typically conducted as a family or kin-based task, women are engaged, and children are often assisting, too. Non-formally working women find ways to raise cash and contribute to household revenue by small-scale mining (Chaloping-March, 2006).

In the Philippine context, research about the social dimension of mining communities is limited, more specifically on the perception of affected locals. It is imperative to understand the situation in these communities in order for policymakers to craft more responsive laws. Hence, this study generally aimed to analyze the lived experiences of migrant indigenous peoples as affected by mining operations by (1) identifying the perceived impacts (environmental, economic and social) of large-scale mining; (2) determining the perspective of stakeholders on mining activities in relation to social equity; and (3) analyze the contemporary issues faced by the mining community.

MATERIALS AND METHODS

Locale of the Study

The study was conducted in Barangay Runruno, Quezon, Nueva Vizcaya, where FCF Minerals Corporation conducts its operations. Runruno is one of the 12 barangays that comprises the municipality of Quezon (nviscaya.gov.ph). Based on the 2020 Census, the population of Runruno was 5,548 which represented 23.06 percent of the total population of Quezon. Runruno is situated at approximately 16.4434, 121.3415, in the island of Luzon. Elevation at these coordinates is estimated at 693.2 meters or 2,274.3 feet above mean sea level. (philatlas.com). The municipality of Quezon is composed of 12 barangays (Figure 1). Quezon has a relatively dense forest cover compared to its neighboring municipalities like Bayom bong, Solano and Bambang. The researcher chose FCF Mineral Corporations because it is the only operational large-scale mining company in Nueva Vizcaya, with an existing FTTA back in 2020. The Runruno Gold-Molybdenum Project is not yet well-studied since more focus was given to the OceanaGold Didipio Mines before its closure back in 2019. Runruno is also unique in terms of its residents since the majority are migrant indigenous peoples like Kalanguya, Igorot and others.

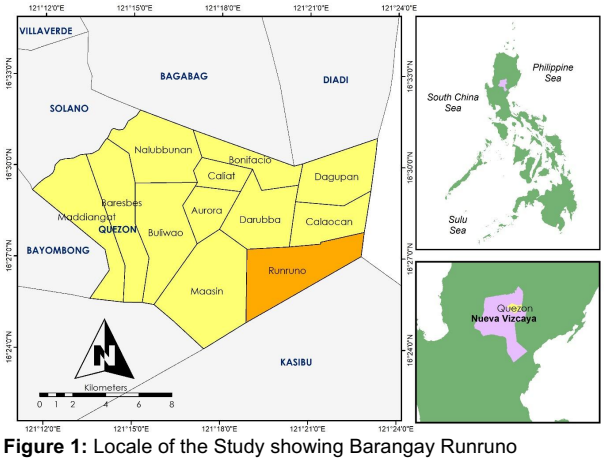

Figure 1: Locale of the Study showing Barangay Runruno

Data Collection Methods

For this study, the researchers focused on knowing the local peoples' perceived impacts of mining, insights of various stakeholder groups on the presence of social equity and identifying the drivers of social equity in a mining community setting. With the use of several methods in conducting qualitative research like focus group discussion, key informant interview and participant observation, the researchers gathered data to answer the research questions.

Site Reconnaissance and Field Visits. Field visit or site reconnaissance was conducted to have an initial assessment of the study site on the first day of the fieldwork schedule. Coming with a local guide, the researcher travelled around barangay Runruno after which he saw the FCF Mineral Corporation (the actual mining site and mine tailings), forest rehabilitation program area, FCF information center, schools and the newly built barangay hall.

Key Informant Interview (KII). To obtain first-hand information about the mining activities, the researcher interviewed key informants from four main sectors namely, the community members of Runruno, Local Government Units (LGUs), Department of Environment and Natural Resources (DENR) and sub-offices, FCF Minerals Corporation and Mines and Geoscience Bureau (MGB). Informants were interviewed for their knowledge, opinion and experiences that would provide insights on the current state of the community (Carroll et al., 2004). A total number of eight individuals were considered as key informants.

Focus Group Discussion (FGD). Participants from the community who share the same interest and experiences were gathered in the Focus Group Discussion (FGD) to discuss their perceptions, opinions, and ideas about the organization (Baral et al., 2016). Eight participants attended the FGD. The participants were asked by the moderator about their perception on certain issues on mining, and also took the opportunity to ask them about pressing issues being faced by the community. E ight participants attended the FGD.

Secondary Data Collection. To supplement the primary data collected from the community members and other stakeholders, secondary data were gathered. Reports from Mines and Geosciences Bureau (MGB) Region II provided substantial data about the compliance and activities of FCF. Reports from DENR and MENRO were also used, such as compliance of FCF to existing environmental laws. Lastly, some materials from FCF like the Social Development Management Plan Report for 2021 were used.

Individual Interviews Through Theoretical Sampling. In qualitative research, determining an appropriate sample size is ultimately a question of judgment and experience in weighing the quality of the data obtained against the intended applications, the research technique and purposeful sampling strategy used, and the research outcome (Sandelowski, 1995). Since this study used grounded theory, it is tantamount to also using theoretical sampling. Theoretical sampling is the grounded theory strategy of obtaining further selective data to refine and fill out your major categories (Charmaz, 2006). Once the study has become more focused, more respondents were needed to fill the gaps of the data collected. The goal was to reach saturation or no new findings are being observed. The researcher interviewed 45 respondents from the community of Runruno, FCF Minerals Corporation and other stakeholder groups.

Data Analysis Methods

Thematic analysis through grounded theory coding was used, being aided by the MAXQDA 2022 software. 45 individuals were interviewed which represented various stakeholder groups, but the majority of which were migrant indigenous peoples like

Kalanguya, Igorot and others. Coded segments were obtained from the interview transcripts, audio recordings, and others. These codes were then used in answering the research questions and providing an abundant amount of details about the locals' experience with large-scale mining. The researchers also used participant observation in order to fully understand how locals experience being involved in large-scale mining operations. In total, fourteen days were spent in the community; eleven days for the main data gathering activities and 3 days for the theoretical sampling, or until reaching the saturation of data.

Coding. Coding or Grounded Theory coding is the "pivotal link between collecting data and developing an emergent theory to explain these data" (Charmaz, 2006). Coding means defining what transpires in the data leading to understanding it. Coding has two main phases, namely; initial coding and focused coding. A third type called axial coding relates categories to subcategories, specifies the properties and dimensions of a category, and reassembles the data that has been fractured during the initial coding to give coherence to the emerging analysis (Charmaz, 2006).

Memo Writing. Memo writing or memoing is another important step in Grounded theory. Memo-writing constitutes a crucial method in grounded theory because it prompts the researcher to analyze the data and codes early in the research process (Charmaz, 2006). These memos are like "notes to self" on why such codes were made.

MAXQDA 2022. It is a software package for qualitative and mixed method research. This can help analyze all kinds of data, from text, images, audio/video files, focus group discussions and many more. MAXQDA also helps researchers organize their data in such a way that they could sort and categorize similar inputs. For this study, MAXQDA was used for sorting and organizing the data through coding and memo writing (maxqda.com). The researcher used a MAXQDA 2022 student license, which is equivalent to a 6-month subscription. The software's user interface includes four main windows namely Document System, Code System, Document Browser and Retrieved Segment window. By using MAXQDA 2022, transcripts of all the interviews can be sorted and coded. Memo writing also helps the researcher understand better what information those data provide. MAXQDA is also used to analyze voice recordings, pictures, Focus Group Discussion (FGD) transcripts and others. Interviews were recorded and were then transcribed and imported to the MAXQDA 2022 software. Before each interview conducted, respondents were informed that their identity will be kept confidential and that their answers will only be used for research purposes. The categories obtained were from the series of focused coding conducted. Throughout this paper, the excerpts from respondents will be assigned with code names like Respondent1, Key Informant2, etc. In cases that two or more were interviewed simultaneously, letters a, b and c will be affixed after the number (e.i. *Key Informant3.a, Key Informant3.b and Key Informant3.c*).

RESULTS AND DISCUSSION

Impacts of Mining

Economic Impacts. The identified economic impacts of large-scale mining in Runruno were categorized as positive and negative economic impacts. The positive economic impacts mostly revolve on providing jobs to locals and implementing alternative livelihood programs through the Social Development and Management Program (SDMP). The negative impacts, on the other hand, are concerned with the residents losing their jobs because of the prohibition of small-scale mining in Runruno. Before large-scale mining even started in Runruno, the majority of the locals engaged in agricultural activities and small-scale mining. Locals have mentioned that they practiced 'placer" or placer mining, wherein they use water to separate gold particles from other surrounding sediments or debris. In this type of mining, men and women were involved since it did not require too much machinery or strenuous work. A few respondents confirmed that they were practicing this decades before large-scale operations started in the community. Mining companies started their operation back in the mid-2000s. Metex Mineral Resources Corp. or locally known as "Metex" was granted a permit to mine gold and copper deposits in at least six villages in the municipalities of Quezon and Kayapa (philstar.com). In spite of the oppositions from anti-mining livelihood activities. There is a scheme where each sitio specializes on a product which will then be sold to the company or to the community. Based on the 2021 Annual Social Development and Management Program (ASDMP), through FCF's Enterprise and Development Networking Programs, has allotted a total budget of 2,113,750 pesos which was benefited by 158 individuals. The specific livelihood programs include loom weaving, *Runo Sewing Services,* ginger production, vegetable production, establishment of durian plantation and hollow blocks production. Runruno Community Multi-Purpose Cooperative (RCMPC) is also helpful in generating income and providing employment. RCMPC engages with services like savings deposit, loan services, merchandising, procurement and others. All funds used for the activities under SDMP were from the mining company. By the year 2009, FCF Minerals Corporation (FCF) converted its exploration permit with the Philippine Government into a Financial or Technical Assistance Agreement (FTAA), marking the start of Runruno's passage to economic transformation. Although it appeared that groups and locals, the company still continued its exploration for almost two years. Respondents are aware that Metex conducted exploration in Runruno. *"When there was no large-scale mining yet, of course we were already here … in the river, we also got some gold in the river… Yes, then we use a placer and when you look at it, there are some sediments..." (Respondent1);"In Metal, Metal Exploration, if I'm not mistaken around 2005/2006" (Respondent4); "That's Metex and MTL… (Key Informant2).*

It could have been prevented from happening if the residents of Runruno only agreed to still engage in mining activities under Republic Act No. 7076 otherwise known as the "People's Small-Scale Mining Act of 1991". The law stated that the state must promote, develop, protect, and rationalize viable small-scale mining activities in order to create more job opportunities and ensure an equitable distribution of the nation's wealth and natural resources, while taking into account existing rights (lawphil.net). It is commonly coined as "Minahang Bayan". There are two contrasting claims about why the community failed to apply for this permit. Locals believe that they were not informed about this, hence left with no choice about the decision to be involved in large-scale mining. On the other hand, some officials mentioned that it was the residents' decision after all.

During the early years of FCF's operation, a memorandum of agreement between the company and Barangay Local Government Unit (BLGU) has been signed which states that locals from Runruno will be prioritized for job opportunities, provided that they are fit for the said vacancies. Aside from that, a number of businesses have also sprouted as a result of the influx of workers and new residents in Runruno (like dressmaking). Part of the company's SDMP is to capacitate community members in venturing into other the operation of FCF brought employment and development in the community; it sadly displaced some families residing in the area covered by the FTAA (Sitio Tayab in particular). Not only that some lost their place to live, those residents that rely on small-scale mining

also lost their livelihood because it was prohibited. A lot of residents were able to claim ownership of their land when the news about large-scale mining operations circulated. Key informants from FCF confirmed the information. *Almost all of the respondents mentioned that there are livelihood programs implemented in Runruno. Some of the livelihood activities mentioned are weaving (Respondent9), dressmaking (Respondent7), and funds given to organized associations per sitio (Respondent12&13).*

"I'm not sure if there is or not" (Respondent9); "There is. Like me, I sew rugs. Little by little, sometimes my children used to work but now they don't... they only work for a while" (Respondent2); "It seems like there is nothing yet, sir, there is sewing, there is training in sewing" (Respondent5) "But when mining came in, so there were claimants in our area, there were more people who were paid a large amount, among those within the company's FTAA area, they were the ones who benefited more than the majority and a proof is that they established businesses here, they are the ones paid by the company there in our acquired areas" (Key Informant3.b)

As of writing this paper, FCF has around 700 regular employees and 400 that are hired under a contract of service, of which 60 percent of it are residents of Runruno and adjacent municipalities while the remaining 40% are outsiders. According to a report by the Mines and Geosciences Bureau, despite the difficulties caused by the COVID-19 epidemic, the Philippine mining industry contributed 102.3 billion to the GDP in 2020 (denr.gov.ph). Although these numbers may appear to be a good indicator, the local economic condition is still the litmus of mining's positive economic impact. As mentioned earlier in this paper, Large mining projects have the potential to produce extremely inequitable outcomes, with local areas carrying the majority of the social and environmental costs and domestic and foreign metropolitan centers reaping the majority of the economic rewards (O'Faircheallaigh, 2015).

Environmental Impacts. Environmental effects can occur during exploration, mine development, mine operation, and even after a mine has shut down, making the discovery, extraction, and processing of minerals one of the most socially and environmentally damaging industries in the world (Bebbington et al., 2008). The Philippines is extremely susceptible to typhoons and periods of intense rainfall, which can negatively affect large-scale mining operations and degrade the natural resources that the rural poor rely on. Typhoons are growing stronger and more unpredictable due to climate change, which makes it more challenging to try to rely on mining as a driver of development (Holden, 2015).

The environmental impacts identified were also divided into positive and negative impacts, but were further categorized as impacts on Land, Water and Air. Actual responses of locals on the environmental impacts of large-scale mining are discussed in each category.

Impact on Land. In the case of Runruno, the apparent impact of large-scale mining on the local environmental condition is forest loss. Given that FCF operates as an open-pit mining company, inevitably patches of forest will be cleared out in order to extract gold and other metals. In spite that the company has not yet fully exhausted the range of their FTAA (which covers 3,093 hectares), locals are already complaining since they can see that an entire mountain or hill was left bare. Runruno's total land area covers 29.27 percent of the municipality's land. Almost 7,000 hectares are categorized as forestland (Table 1).

Table 1: Administrative Coverage and Land Classification per Barangay (Source: CLUP Quezon, 2015)

Barangay	Area			Percent Share
	A & D	Forestlands	Total	
Aurora	**530.51**	270.11	800.62	3.01
Baresbes	**479.72**	266.66	746.38	2.80
Bonifacio	**540.99**	1,901.38	2,442.37	9.17
Buliwao	**460.55**	2,321.37	2,781.92	10.44
Calaocan	**409.94**	1,590.91	2,000.85	7.51
Caliat	**704.2**	127.20	831.40	3.12
Dagupan	**22.76**	3,086.35	3,109.11	11.67
Darubba	**432.74**	391.96	824.70	3.10
Maasin	**277.93**	2,241.68	2,519.61	9.46
Maddiangat	**518.87**	850.83	1,369.70	5.14
Nalubbunan	**862.12**	551.64	1,413.76	5.31
Runruno	**797.46**	6,999.27	7,796.73	29.27
Total	***6037.79***	***20,599.36***	***26,637.15***	***100.00***

Source: Land Classification Map, Administrative Map Year 2018, Cadastral Map

Almost all of the respondents identified deforestation or forest degradation as the major environmental impact brought by large-scale mining operations, primarily because it is the most visible one. There is another perspective wherein it says that the major contributors to deforestation were logging in the 70s to 80s and kaingin farming. Although the majority are negative, some believe that the company has also brought positive impacts like reforestation.

"There was actually a logging concession back then, 80s maybe even 70s. The old-growth forest is depleted, only the residual forest is left. What really consumed the forest, what followed was kaingin, really destructive"(KeyInformant6);

"The woods there are disappearing, sir, because they bought the land there, the mountain, that clearing, then the land will be dug up and then the land will be transferred" (Respondent5); "The good effect of this on nature is the what is that, the tree planting, the reforestation. Forest reforestation" (Respondent6)

Related to this environmental problem, locals are now anxious about the possible occurrence of landslides and flash floods. Just last November 2020, a landslide occurred in Sitio Bit-ang and Kinalabasa which claimed the lives of ten people, including a two-month-old baby, and injured two others. A team of geologists and technical employees from Mines and Geosciences Bureau Region II conducted a site inspection at the landslide sites caused by Typhoon Ulysses (International name: Vamco) which made landfall in the Philippines on November 11, 2020. Based on their geohazard assessment, the area where the landslide happened is highly susceptible to flooding and landslide, hence such incidents must not be attributed to mining activities or deforestation (Basilio, 2020). Among the barangays in the municipality of Quezon, Runruno has the highest number of individuals that are highly vulnerable to landslides (Table 2).

Table 2: Data on Population Vulnerable to Landslide per Barangay (Source: CLUP Quezon, 2015)

Barangay	Total Population	Affected Population		
		High	Moderate	Low
Aurora	1,578	1	36	61
Baresbes	1,419	-	12	89
Bonifacio	855	-	120	-
Buliwao	2,723	22	66	134
Calaocan	1,090	45	32	-
Caliat	1,875	-	8	-
Dagupan	1,254	29	72	-
Darubba	1,581	-	34	43
Maasin	953	79	-	-
Maddiangat	2,353	21	1	13
Nalubbunan	1,604	-	9	-
Runruno	3,771	339	-	-
TOTAL	**21,056**	**536**	**390**	**340**

Source: CDRA

In spite of all these negative impacts of mining, the company still tries to offset it in various ways. One of these is the Mine Forest Project. Through a memorandum of agreement, the plantation establishment and maintenance and protection will be incentivized. The areas are contracted to families wherein free seedling were given to which, mostly are indigenous and fruit-bearing species. The presence of the company also improved the monitoring of forest areas, hence patrolling the sites helped curb slash and burn farming in Runruno. In terms of the company's compliance to environmental laws, the Runruno Gold-Molybdenum Project is one of the fifteen Environmental Critical Projects (ECPs) with existing Environmental Compliance Certificate (ECC) in Region II, as of December 31, 2021 (eia.emb.gov.ph, 2021).

Impact on Water. Impact on Water. Another environmental problem that was mentioned by some respondents is the contamination of the rivers and the reduction of water supply. As the older people said, before mining activities started in their barangay, almost all of the tributaries in Runruno were clean enough for bathing and fishing. They also mentioned that they never had a problem with water supply. For the past years, they have observed that the waters near the process plant have turned yellowish, as what they consider as an indicator of water pollution and sedimentation. In some cases, bathing in these streams caused skin irritations to the residents. These claims were not proven since the mining company has a wastewater treatment facility and a newly constructed tailings dam: *"It's really polluted because it's not clear anymore. Because when they drain the chemicals used to grind the stones. Sir, because they have the facility, they built a dam at the top. It goes there before going to the river. It seems to be filtered before going to the river. But the color is really different, then the smell is different, like sulfur" (Respondent5).* The company constantly monitors the water quality in nearby rivers and streams. Mining companies should also comply with the Water Quality Guidelines and General Effluent Standards of 2016 or DAO 2016-18 (eia.emb.gov.ph, 2021). On the other hand, there are still clean parts like in Lintungan falls, which is also a good source of clean water for the entire barangay. Lintungan falls is also a famous tourist attraction in Nueva Vizcaya.

Impact on Air. Among the environmental impacts that large-scale mining has brought, the impact on air quality is less-observed by locals. Only a few have mentioned that it has affected their community. Their complaint stems from two scenarios. Some locals complain that roads become covered in dust during the dry season because of the trucks that are continuously passing by. The other scenario came from the residents living in Sitio Tayab. This is located approximately 300 meters away, northwest of the process plant site facility. They are complaining that the foul smell of the chemicals from the plant reaches their houses. Some residents believe that it causes respiratory illnesses. Ambient air quality must be measured continuously in mining companies/communities to ensure that the operation does not affect the air quality drastically, hence it is still within the normal or acceptable range given by EMB. FCF also monitors the ambient air quality in Runruno. Monitoring the air quality is not for mere compliance, it is to safeguard the health and wellbeing of locals living in the mining community.

"In Tayab because there are still residents there. So actually, those are the people who complain here in the barangay, so I called the management, so, they talked about it so a solution was given because there is a problem that must be solved" (KeyInformant2); "Because in summer the dust is very thick. Then it's not like they're doing something every day, their water truck that's supposed to be on the road, isn't there either" (Respondent5); "Maybe it's in the process plant, maybe the chemicals are what they inhale" (Respondent45)

With these perceived environmental impacts, it is still difficult to say if these are caused by mining operations. According to Widana (2019), even if there is evidence that these repercussions have already surfaced in the operations of many active mines, these records are often not very reliable. Lack of a baseline environmental database, insufficient monitoring of environmental changes, and poor recordkeeping are the root causes. As mentioned by one of the key informants, there was a logging concession in Runruno decades before the boom of mining in their community. Hence, it poses a challenge to identify which among these impacts are caused by large-scale mining.

Social Impacts. While FCF's directive to ensure that most of the locals will benefit from their operation, people still have contrasting perspective towards equitable benefit-sharing and opportunities. Compared to the economic and environmental impact of mining, the social impact is comparatively more difficult to identify. On the other hand, mining also can trigger some negative social impact on the community. One major impact is the displacement of some residents. As mentioned earlier, although many have benefited from the employment and projects implemented, a different side of the story continues to arise. The families that were displaced during the time when FCF was negotiating in acquiring land were left with no choice but to relocate to other sitios or barangay, *"There is a situation with us that some are willing to sell the land, but the others just priced it, but don't like the price, and they can't do anything whether you accept it or not. For me, they want to raise but they can't, what is the price that was actually said"(Respondent5).*

Other key informants explained that most of these 'claimed' lands are actually forest lands but still FCF paid them as a sign of being considerate. Most of the claimants showed their tax declaration as a proof of ownership. Tax declaration should not be used for proving ownership, but for taxation only. Prior to the entry of mining companies in Runruno, the standard of living of residents was fairly homogenous. People mostly engage in agriculture and small-scale mining. "*As per our interactions with people, previously there was not much effect when mining did not exist because they were all engaged in small-scale mining…" (Key Informant3.b).* When FCF started 'buying' parcels of land (only those that are classified as Alienable and Disposable) that will be covered by their FTAA, those residents that own relatively large areas have earned millions. According to one key informant, the selling price of land was at seven million pesos per hectare (or 700 pesos per square meter) but there are cases that some owners received smaller amounts. It was also mentioned that a select few demanded a higher price since they were informed that the mining company can pay a huge amount of money.*"Millions because if you really look at it, it's like a forest. So, there are also factors that the community seems to have learned, that I feel that there is an external factor that someone has already told them that it's mining, they should demand a big price"(Key Informant3.a).* This sudden flow of income to a few has given them a platform to improve their standard of living. However, it was observed that this has created a 'hierarchy' among locals. A stratification in terms of socio-economic status that also exacerbated the condition of some. Some families even had disputes because of conflict of interest when it came to selling land. The peaceful and simple life of the locals somehow morphed into a community that has conflicting priorities and interests. One respondent mentioned that when FCF entered their community, these changes were seen:*"As for living, it's okay. Before there were no problems. Everyone is fine here. There was what we call "bayanihan", that is still happening. But when the FCF came there was a change, there was a lie, envy, what's that called, boasting then something*

about the area came out" (Respondent4).

Given these negative social impacts, FCF has diversified its programs to resolve such issues. Companies in the Philippines and other countries conform to the idea that their operations should be socially responsible. Corporate social responsibility (CSR) is a management concept in which businesses incorporate social and environmental issues into their operations and interactions with stakeholders. CSR is defined as the process through which a business achieves a balance of economic, environmental, and social imperatives (United Nations Industrial Development Organization, n.d.). If CSR practices are used, mining operations may be seen as more socially and ecologically responsible (Pons, et al., 2021).

Through job and livelihood opportunities brought by the company, locals were also given the chance to train and improve their skill sets. Some even had the opportunity to work abroad because of their work experience at FCF. Other social services facilitated by FCF are access to health services, health facilities and health professionals. Specific projects are procurement of medicines and equipment, Medical and Dental Mission, and infrastructure projects with a total number of beneficiaries reaching 15,472 individuals. Education is another sector that benefits from the SDMP of the company. Through their Access to Education and Support to Education Program, FCF has supported the education of a number of students by providing laptops, printers, inks and others. There are also 16 college scholars and support given to Alternative Learning System (ALS) and Early Child Care and Development Program (ECCD). The current barangay hall of Runruno which costs 17.4 million pesos is also part of FCF's SDMP which was completed in November, 2021.

Aside from education, people are also encouraged to actively participate in meetings and training. These are under the Human Resources Development and Institution Building. The specific activities are Community Based Organizations Quarterly Meeting, Community Based Organizations Semi Annual Meeting and Assessment and Mushroom Production Training. 286 individuals have participated and benefited from these activities. Knowing that Runruno is a multicultural community, FCF also promotes the protection and respect of socio-cultural values. Last December 10, 2021, Barangay Runruno conducted "Lahi ko, Yaman ko" program which included tree planting and fun run, IP Day and Barangay Christmas party. Programs like these are significant in encouraging social integration. Lastly, FCF implements the IEC Program to guarantee that direct stakeholders will have a strong foundation of public awareness and understanding of responsible mining and geosciences. Three IEC centers were built in order to provide stakeholders access to information related to the project. All the programs mentioned above were spearheaded and funded by FCF.

With these perceived impacts (Figure 2), it is also fitting to know the interaction between them. Looking at the community as a complex system, what happens in one subsystem will affect the other. In a mining community like Runruno, it is evident that the tradeoff of economic gain is the depletion of forest cover and the degradation of soil and water. In FCF's defense, they are compliant to the environmental laws and protocols, and the quality of air and water are still within the acceptable/normal range. The environment serves as a sink for emissions and waste, as well as a supply of resources for the economy, which strengthens the connections between the two. Despite the fact that production and consumption of natural resources also contribute to pollution and other environmental challenges, they are necessary inputs for many industries. Because resources are scarcer and of lesser quality, or because of health effects, etc., poor environmental quality has an influence on economic growth and wellbeing.

In this situation, environmental regulations can reduce the adverse effects of the economy on the environment (and vice versa). However, there is substantial discussion surrounding their effectiveness and whether they offer a net benefit or cost to society, which is dependent on how they are created (Global Forum on Environment and Economic Growth, 2016). This is true in the case of Runruno. The forest rehabilitation programs of the mining company counterbalance the negative impact to the environment. Aside from the locals of Runruno, other stakeholder groups also experience the impacts of mining, although indirectly. They too have their own perspective on what is happening in the community in general. Focusing now on social equity, these actors play a role in policy implementation and decision-making. In the next part of this paper, the perceptions of different stakeholder groups towards social equity in mining communities will be discussed.

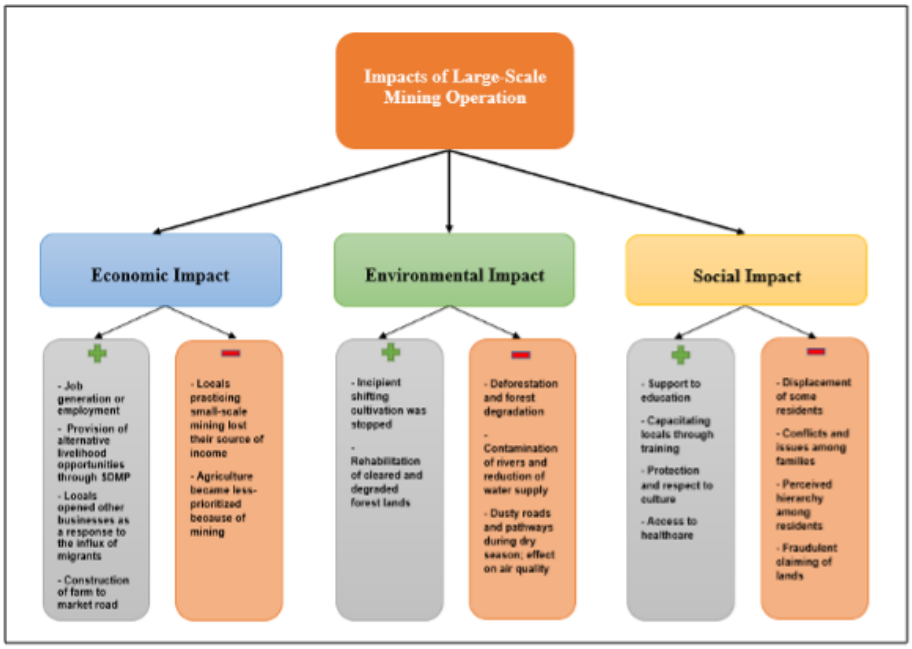

Figure 2: Perceived Impacts of Large-scale Mining in Runruno,

Perception Towards Social Equity in Mining Communities

The lived condition of local people in a mining community is indeed an amalgamation of various sectors' decisions, perceptions and belief systems. In this research, key informants from different stakeholder groups were interviewed regarding their perspective on social equity. The stakeholders groups are the Barangay Local Government Unit (BLGU), Municipal Environment and Natural Resources Office (MENRO), FCF Minerals Corporation, Mines and Geosciences Bureau, Department of Environment and Natural Resources (DENR) and the group of residents. Based on the interviews, it can be assumed that these stakeholders have varying understanding of what social equity is. Nonetheless, their stand on whether social equity is practiced or not is shown below (Table 3). The perception of the key informants does not necessarily reflect the views and opinions of their office or company but it explains their understanding of the community's condition. It is deemed imperative that social equity or simply fair sharing of benefits be achieved in mining communities not only because of the company's corporate social responsibility but also because locals are critical when evaluating whether mining is beneficial to all. Although the necessary conditions for the continued acceptance of mining operations were not explicitly stated by the residents of Runruno, it can be inferred that the practice of social equity is an indicator of sound program implementation.

Table 3: Perception of Stakeholders on Social Equity

Stakeholder Groups	Is Social Equity Being Practiced in the Community?
Barangay Local Government Unit (BLGU)	Yes
Municipal Environment and Natural Resources Office (MENRO)	Yes
FCF Minerals Corporation	Not Fully
Mines and Geosciences Bureau (MGB)	Yes
Department of Environment and Natural Resources (DENR)	Yes
Residents of Runruno	Not Fully

Seeing that most of the stakeholder groups believe that there is social equity in Runruno, this can also mean that less effort (in the form of policies and programs) will be made to address the issue of inequity. Taking the case of the government offices, they stated that FCF has been treating the residents of Runruno with fairness and diplomacy in spite of the incidents that some individuals are being abusive of the company's leniency. Through the livelihood programs implemented by FCF, locals somehow still receive benefits from the large-scale mining operation. *"Here in FCF, I can see that it is okay but I think the benefit that we get is small, especially us that receive the direct impact. Some are complaining because they are not benefiting but the company has provided other alternative livelihood activities"(Key Informant2).*

One example is when few claimants were paid more than once by the company. If fairness in benefit-sharing is evaluated, the data shown in Table 3 applies. The answers of the key informants were more or less unanimous when it comes to social equity pertaining to fairness in sharing of responsibilities. Locals and the staff of FCF are not fully convinced that fairness is practiced in the community. A key informant representing the locals of Runruno mentioned that you will receive less or no benefits if you are not affiliated with any of the barangay officials. A number of respondents also expressed their dismay at the unfair distribution of benefits.

"Because if you don't have connections to the barangay officials, you will not benefit that much"(KeyInformant1); "In my opinion, 50% of the population is benefiting while 50% don't. Those who benefit mostly are the ones working on the company"(Respondent4); "No, there is no fairness. Because the barangay officials receive something aside from the honorarium"(Respondent2)

Although various stakeholder groups have conflicting views on the practice of social equity, there were a few that stated that fairness is still evident in their community. Most of them are relatively younger compared to other respondents and key informants. Hence, it opens another facet wherein age can be a factor on how people view social equity. *"I think it is fair sir. It depends on the person if he wants to participate, they can come or not participate at all"(Respondent5, 19 years old); "Yes, there is fairness"(Respondent6, 20 years old).*

Another aspect to look at is the fairness in responsibilities. For instance, whose responsibility is it to rehabilitate the denuded and mined out forest areas? The common answer (36 out 45 respondents or 85%) is that it is the company's responsibility to rehabilitate the area but there are deviating answers from a key informant. She mentioned that the government or the president handles what has happened in Runruno.

"I think the government is to blame, during the time of president Arroyo, that is why it was signed. Now they are blaming president Duterte but he just recently became the president. I hope once they finish their operation, they do not just leave the chemicals. Be responsible unlike what I watched in Benguet, the forest is dense but the rivers are polluted"(KeyInformant1).

On the other hand, one key informant representing the local government unit mentioned that MGB and EMB spearheaded the rehabilitation of cleared and degraded areas. Legally speaking, mining companies operating under an approved FTAA or other permit must have a forest rehabilitation program, as mandated in DAO 2022-04 or also known as Enhancing Biodiversity Conservation and Protection in Mining Operations. The purpose of this directive is to set forth appropriate safeguards for mining with a focus on protecting and preserving biodiversity, including gradual and complete regeneration of mined-out regions. The country's natural and mineral resources will be used sustainably for both current and future generations by minimizing negative impacts on biodiversity and ensuring its preservation (apidb.denr.gov.ph). With these sets of policies, it is saddening that promoting social equity in mining communities is still neglected.*"The members of forest rehabilitation, the heads are EMB and MGB. Other members include the municipal mayor, governor,and other NGOs and religious groups. There is a separate fund for the rehab. It is called the Mine Rehabilitation Fund Committee. For us working here, we are the policy-making, like field workers."(Key Informant4).*

It can be seen that the government officials have more awareness about the involvement of other agencies, in rehabilitation for example. Among the residents of Runruno, the answer to whose

responsibility is it to rehabilitate the areas was varying. Some are pointing to FCF while some believe that the locals in partnership with BLGU should lead the rehabilitation.

"The MLGU and the barangay should work together" (Respondent44); "The barangay captain and municipal mayor"(Respondent12); " I think since FCF destroyed it, they should fix it too. They don't even allow outsiders there"(Respondent4)

With these perspectives from different stakeholder groups towards the practice of social equity, the researchers gained a better understanding on the socio-ecological dynamics of the mining community. Project implementers, when dealing with indigenous peoples, focus on poverty alleviation and security of tenure. The reason for this is that the idea of social equity gained traction in the Philippines due to the high rate of poverty, which is exemplified by the numerous marginalized and disadvantaged groups that include the impoverished in both urban and rural areas, as well as farmers, migrants, indigenous people, and rural and urban folk (Brillantes et al., 2019). Although Rebugio (2015) argues that social equity is about the fair distribution of benefits, it is inevitable to notice that there is much focus on rural poor rather than considering the condition of every community member.

Contemporary Issues in the Mining Community

As mentioned earlier, most of the migrant indigenous peoples in Runruno are from northern Luzon. Some of them have knowledge of mining, like a number of key informants that are originally from Benguet and Mountain Province. Based on the interviews conducted, the mining community of Runruno faces challenges that pose a threat to people's livelihood in general. Respondents interviewed have varying opinions on the continued operation of FCF. It is challenging to unify the clashing perspectives of all stakeholder groups primarily because livelihood and environmental stability are at stake.

A Call to Stop Large-Scale Mining. Despite FCF's operation for more than a decade, it is still evident that some residents of Runruno are not amenable to its continuity. Majority of the respondents interviewed wish for the closure of the mining company because of the damage they see on the environment (Figure 3). The government officials, on the other hand, both at the municipal ang barangay level, are in favor of the company's continued operations. From the perspective of locals employed in the company, its closure will significantly affect their livelihood, hence their survival. It was observable that those that are clamoring for its closure are those who receive less or no benefit at all. Although FCF tries to ensure that everyone benefits from their operations through the Social Development and Management Program (SDMP), it is still inevitable that some individuals might feel that they are taken advantage of. From a utilitarian perspective, the company should exert more efforts to appease the pressure from locals and other stakeholder groups.

"Even though we are not in favor of what they are doing, it is already there. We cannot force them to leave the community" (Respondent3); "For me, I think they should stop because the mountain is already destroyed. The more that their operation widens, it will be more dangerous when typhoons come. There will be landslides" (Respondent5) "Actually, I'm not in favor of their continued operation. There are many advantages, like the construction of our barangay hall but what about our future generation? They will experience the consequences of these activities" (Respondent12)

Figure 3: Cleared forest area in Barangay Runruno, Quezon, Nueva Vizcaya

Favoring their Traditional Livelihood Activities. For the past years that FCF is in operation, it is undoubtedly evident that it has altered the economy of Runruno as a community. From predominantly agricultural, locals engaged in large-scale mining operations. In present times, residents are starting to realize that their traditional livelihood activities are more sustainable. The environmental impacts, more specifically on land, will make it difficult for them to go back to farming. Aside from that, the government prohibits slash and burn agriculture or *kaingin.* Even though they have the traditional knowledge and skill set to farm, most of the lands are already covered by the company's FTAA. Another aspect that needs to be highlighted is that some respondents believe that small-scale mining is better or more beneficial than large-scale mining. Based on interviews with locals that used to do artisanal mining, they mentioned that they earned more and that they immediately receive the outcome of their labor since there are middlemen who will buy the gold they collected. Unfortunately, this practice is illegal and is not regulated by the Mines and Geosciences Bureau (MGB).

As mentioned earlier, the majority of the residents of Runruno are migrants from northern Luzon. From a cultural perspective, these people have been practicing artisanal mining since time immemorial. They view it as a sustainable livelihood activity where every member of the family can participate. Bugnosen (2002) explained how culture is knitted in artisanal mining among indigenous people. The "sagaok" method used by Igorot gold miners in northern Luzon serves as an illustration of this. This specific custom entails the sharing of gold ores and labor among miners as a way for the more successful miners to assist the less fortunate ones. In addition to the sincere desire to assist fellow miners, there is a widespread perception that miners who assist others will be bestowed with more riches. In the case of the residents of Runruno, their indigenous knowledge on mining cannot be practiced anymore. This is a tradeoff that migrant indigenous peoples face.

Resource-related Problems and Decrease in Employment. Runruno has been a mining site for more than seven decades, both for artisanal and recently for large-scale mining too. As gold and other minerals are non-renewable resources, it is expected that through time, less and less will be extracted. According to some key informants from FCF itself, the mining company is at the verge of halting its extraction. Locals and some employees are saying that the company has at least two to three years left to extract, although its Financial or Technical Assistance Agreement (FTAA) will expire in 2034. If this comes into fruition, the company might need to lay off the majority of its employees. This will seriously affect the residents that depend on FCF for their livelihood.

Figure 4: Employees of FCF Minerals Corporation interviewed

In the event that a mining company suddenly closes, mitigating measures should be taken. The company must help locals cope with its adverse effects. The study conducted by Syahrir et al. (2021) detailed how mining companies with unsustainable development suffered tremendously after the closure. Meanwhile, a company that continued practicing sustainable development managed to maintain the benefits even after the closure. According to their research, responsible mining initiatives typically concentrate only on the mining corporations and especially on the closure's environmental effects. This is a promising beginning, but in order to achieve the best results, businesses and local government units must work together (Syahrir et al., 2021). Although FCF has not yet confirmed these pieces of information about the cessation of extraction, the local leaders should start future-proofing its programs so when the time comes that FCF reached the end of *Life of Mine,* the residents of Ruruno will recuperate and thrive with their new socio-economic and ecological landscape.

Table 4: Summary of Codes, Subthemes, and Themes derived using MAXQDA 2022.

Codes	Subthemes	Themes
-Job generation or employment - Provision of alternative livelihood opportunities through SDMP - Locals opened other businesses as a response to the influx of migrants - Construction of farm to road market	Economic Impact	Perceived Impacts of Large-Scale Mining Operations
- Locals practicing small-scale mining lost their source of income - Agriculture became less-prioritized because of mining		
- Incipient shifting cultivation was stopped - Rehabilitation of cleared and degraded forest lands - Deforestation and forest degradation - Contamination of rivers and reduction of water supply - Dusty roads and pathways during dry seasons; effect on air quality	Environmental Impacts	
- Support to Education - Capacitating locals through trainings - Protection and respect to culture - Access to healthcare - Displacement of some residents - Conflicts and issues among families - Perceived hierarchy among residents - Fraudulent claiming of lands	Social Impacts	
- Not benefiting from the company - Having a *'padrino system'* in hiring - Being unsure if everyone benefits from the large-scale mining operation - Favoring the staff from BLGU - Non-employees are not benefiting - There is unfair sharing of benefits - Key persons having control over resources	Believing that social equity is not being fully practiced in the community	Perception of Stakeholder Groups on Social Equity
- Everyone has access to benefits - Alternative livelihood activities are there for those not employed - Involving locals in all stages of mining operations - Having no gender bias	Social equity is evident in the community	

- Not agreeing that FCF is not practicing responsible mining - Hoping for FCF's closure - Saying that their community is better off without large-scale mining - Lacking awareness about mining - Seeing that mining is short-lived	Clamor of residents about large-scale mining	Contemporary Issues in the Mining Community
- Going back to agriculture - Gravitating more towards small-scale mining	Favoring their traditional livelihood activities	
- FCF nearing its end of extraction phase - Gold and minerals extracted are getting scarce - Some employees might lose their job	Resource-related problems and decrease in employment	

The summary of codes, subthemes, and themes derived using MAXQDA 2022 is shown above. This shows how information from 45 interview transcripts was rigorously read, coded and grouped to answer the research questions. Through this process, the researchers co-created knowledge since they interpret the responses of individuals while being aware of their personal biases.

Understanding how social systems change in response to environmental perturbations can be gained by using the actor-based model, which places a strong emphasis on the processes through which individuals decide how to interact with their surroundings (Orlov, 1980, as cited in Rambo, 1983). In the case of the mining community in Runruno, locals have responded to the development or disturbance uniquely. Although they share a common environment and culture, their adaptive strategies differ (Figure 5).

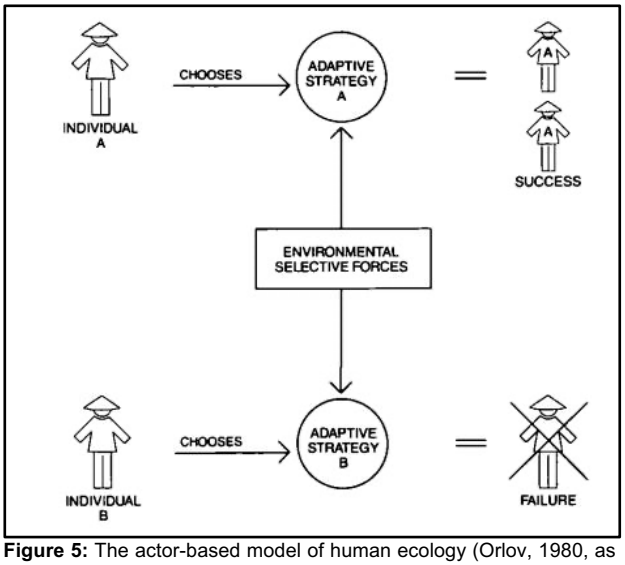

Figure 5: The actor-based model of human ecology (Orlov, 1980, as cited in Rambo, 1983)

For example, some consider mining as a destructive activity that alters not only the environment but also the social dynamics within the community. This was manifested through their continued request to close the mining company. On the other hand, individuals may also see mining as a development that brings positive economic impact. It is important to note that the decisions of individuals are not necessarily rational or strategic in nature. The limitation of this model to explain the lived experience of locals in the mining community can further be explained by the study conducted by Ray-Marti, et al. (2023) using Necessary Condition Analysis (NCA) to assess the social impacts of mining and ultimately identify the factors that affect the local community's environmental satisfaction. They identified six factors namely *Social action, Economic development, Physical and digital infrastructures, Basic services, Health, and Education* (Figure 6). The results of their study highlighted that when the mining industry offers social services like healthcare, basic services and education to the communities where it operates, the locals view the industry's impact as positive (Ray-Marti, et al., 2023). There is parallelism with the lived experience of the migrant indigenous peoples in Runruno. Although they are fully aware of the negative environmental impacts brought about by mining operations, socio-economic benefits somehow offset these negative impacts. In this paper, the two models are merged to explain the lived experience of the locals of Runruno. In this new framework (Figure 7), emphasis is given to the response of individuals to mining activities in general.

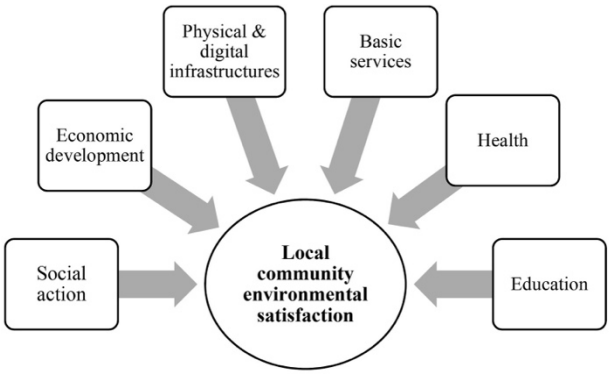

Figure 6: Factors affecting the local community's environmental satisfaction (Ray-Marti, et al., 2023)

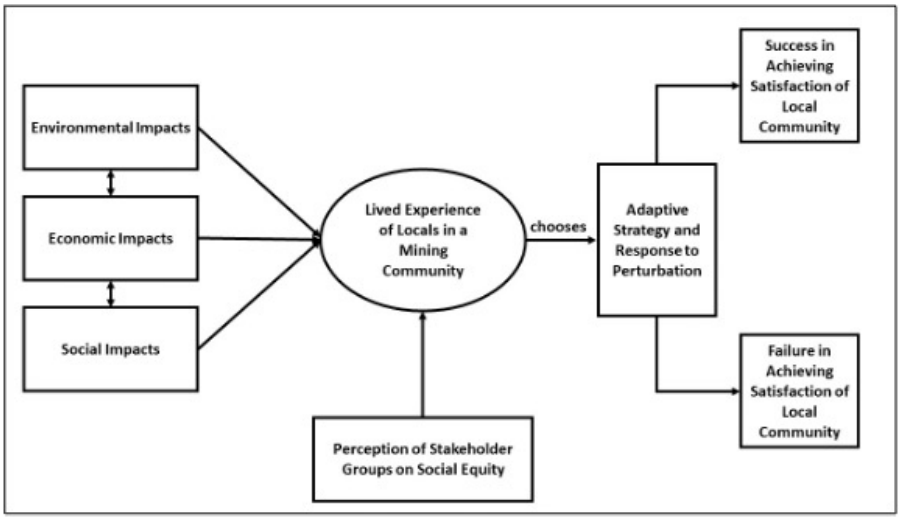

Figure 7: Perceived impacts of large-scale mining operations in Runruno, Quezon, Nueva Vizcaya

If the company managed to fully integrate their operations in the community, locals may accept their continued activities. On the other hand, if the locals perceive their operation as destructive and not beneficial, then FCF failed to achieve the satisfaction of the local community. It is also important to note the impact of how people perceive fairness in benefit-sharing. Stakeholder groups have the capacity to influence how the community views social equity, an integral part of program implementation in the uplands. In essence, an individual's choice and adaptive strategy to new technologies and perturbation is the result of how he or she experiences the impacts.

CONCLUSION

In spite of the mainstream concept of 'responsible mining', it is undoubtedly true that social issues and injustices still arise. Aiming for environmental sustainability at the same time securing economic gain and social equity is a distant reality for these migrant indigenous peoples. In conclusion, the way migrant indigenous peoples experience large-scale mining is highly diverse. The environmental, economic and social impacts of mining activities do affect each individual in manifold ways. Benefits and negative impacts are both experienced by locals, but an individual's inherent condition in the community, such as power and socio-economic status, delineates the magnitude of such. These lived experiences shaped their collective perception of large-scale mining, hence directing their adaptive response. Meanwhile, the conflicting views of various stakeholders also poses an impact on how social equity is being practiced in the community and how it is being brought forward. Lastly, the contemporary issues should be addressed and further integrated into the Social Development and Management Program (SDMP) of the company to ensure that the host community will still receive benefits even beyond the life of the mining operations.

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CONFLICT OF INTEREST

The authors declare that there is no conflict of interest.

CONTRIBUTIONS OF INDIVIDUAL AUTHORS

AC Natividad contributed to the conception of this research, coordinated with the local government units and the mining company, and collected and analyzed data. He also wrote the entire manuscript.

LL Sabino helped in conceptualizing the research and in the analysis. She also helped in improving the manuscript.

MLLP Gata contributed to the conception of this research and provided her expertise in qualitative research, specifically on thematic analysis.

FL Malabayabas helped edit the manuscript and organize the visual presentation of the qualitative data.

PAJ Sanchez helped edit and improve the manuscript. She also provided substantive comments on how to present the data.

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