



The Silent Ongoing Earth Rights Abuses



Kayah Earthrights Action Network

2018, August 17th

Organization Background



Kayah Earthrights Action Network (KEAN) was founded on 15th January 2012 and is implementing activities on human rights and environmental rights in Kayah State. Since its founding, Kayah Earthrights Action Network has worked to provide knowledge to local people about the environment, land rights and the impact of development projects; document human rights and environmental abuses committed by corporations; and promote and advocate for the local indigenous people's right to own and manage their land and natural resources. Currently, Kayah Earthrights Action Network is working in collaboration with other local community-based organizations and the region's indigenous people on the following four issues: land rights, mining rights, natural resource (forest) rights, and the impacts of mega development projects. Kayah Earthrights Action Network is working on rights related to these four issues using the methods of education, documentation and advocacy.

Vision

For the local people in Kayah (Karenni) State to live with dignity, human rights and social justice in their natural environment.

Mission

Kayah Earthrights Action Network is a nonprofit organization supporting communities for human rights improvement, social justice, and sustainable environments through working on human rights and environmental issues. To achieve this, Kayah Earthrights Action Network empowers local communities to defend their rights; conducts documentation and fact finding on earth rights abuses; and advocates in collaboration with local communities for improving local people's access to rights.

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Acronyms

- 1) UNDRIP – United Nations Declaration of Human Rights
- 2) ILO-C.169 – International Labor Organization Convention Concerning Indigenous and Tribal Peoples
- 3) FPIC – Free, Prior and Informed Consent
- 4) IEE – Initial Environmental Examination
- 5) EIA – Environmental Impact Assessment
- 6) EMP – Environmental Management Plans
- 7) ECC – Environmental Compliance Certificate
- 8) John Reggie’s Guiding Principles
- 9) Equator Principles
- 10) The UN Guiding Principles on Business and Human Rights
- 11) EITI – Extractive Industry Transparency Initiative
- 12) ICESR - International Covenant on Economic, Social and Cultural Rights
- 13) KMPC – Kayah State Mining Product Company Limited
- 14) KMTC – Kayah State Mining Trading Company Limited
- 15) UMEHL - Union of Myanmar Economic Holdings Limited
- 16) CSR – Corporate Social Responsibility
- 17) UNGC – United Nations Global Compact Principles
- 18) KNPP – Karenni National Progressive Party
- 19) KNPLF – Karenni Nationalities People Liberation Front
- 20) KNSO – Karenni National Solidarity Organization
- 21) KNLP – Kayan New Land Party
- 22) KNPDP – Karenni National Peace and Development Party
- 23) KNDP – Karenni National Democratic Party
- 24) KNDO – Karen National Defense Organization
- 25) WWF – Women for Women Foundation

Executive Summary

This report is about how weak responsibility and accountability by various stakeholders in Kayah (Karenni) State's extractive sector, an important source of income for the state, has impacted the local people's human rights and environment. Extractive projects have been implemented in Kayah (Karenni) State for over one hundred years and one of the projects from this era, the Mawchi Mine, still continues today. Local people have extracted minerals from Mawchi mine since times prior to Myanmar's colonial period. More recently, mining has continued under the Myanmar government's mining department, business consortiums and foreigners. As of now, there are many foreigners implementing extractive projects, directly or indirectly for their own economic benefit.

Extractive projects in Kayah (Karenni) State not only bring economic benefits but also political benefits. As a result, this industry has become important for both the Myanmar army and various ethnic revolutionary groups (including those with and without active ceasefires between themselves and the Myanmar government). The current Myanmar laws regulating extractive industries provide very few protections for the local people and this coupled with a failure by stakeholders in the extractive industries to act accountably and take responsibility for issues occurring as a result of the implementation of their projects, has left local people facing human rights abuses and environmental destruction. The local people have yet to receive any form of justice or sufficient remedial action for the impacts from these human rights abuses and environmental destruction.

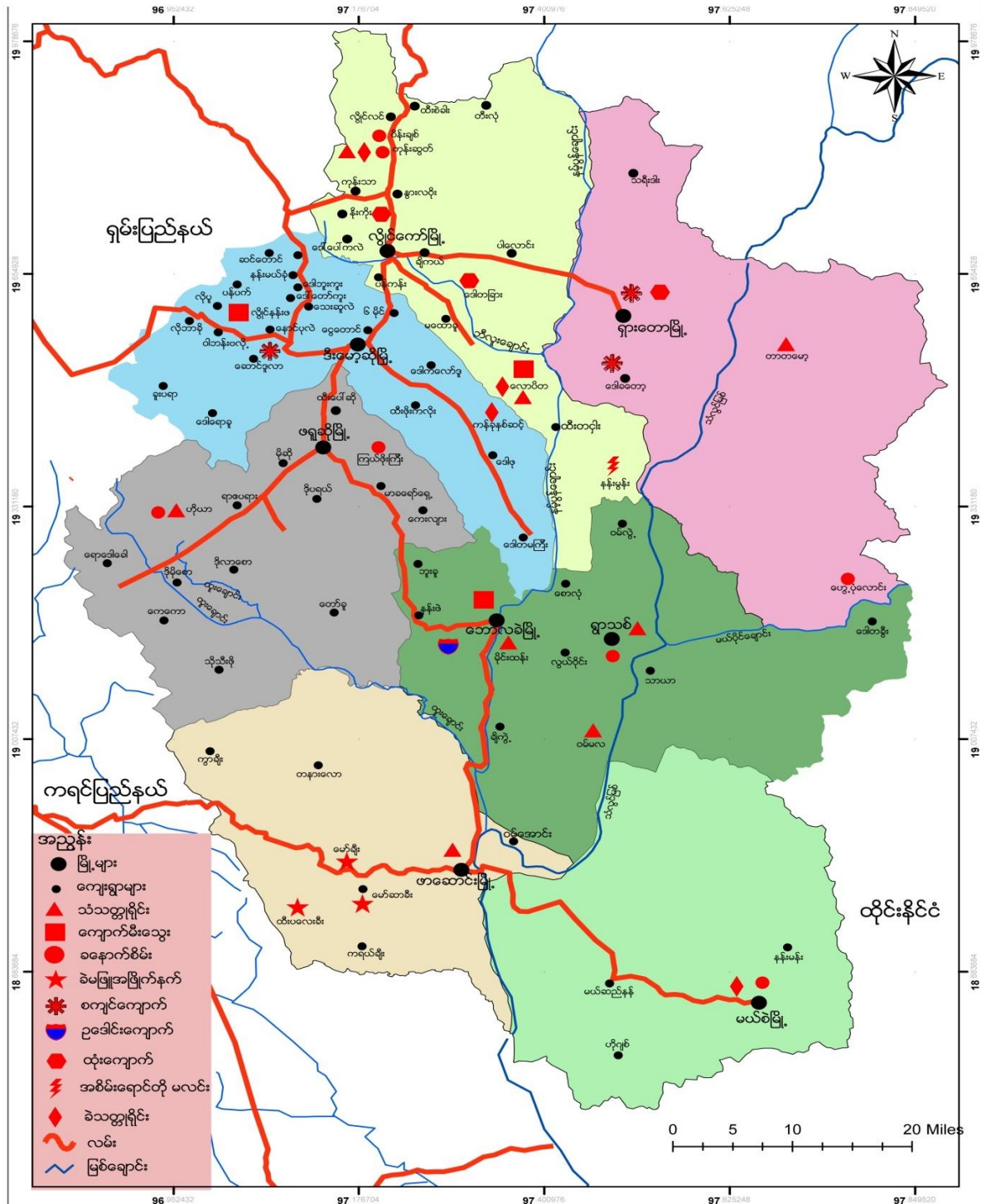
Therefore, the objectives of this report on the extractive industry in Kayah (Karenni) State are:

- For companies implementing extractive projects to provide sufficient remedies to local people who experience human rights or environmental rights abuses;
- For stakeholders in the extractive industries to take responsibility and be held accountable for abuses that occur because of their respective companies;
- To allow for the development of a responsible and accountable extractive sector;
- For the emergence of sustainable extractive projects that include and benefit the local people.

Section 1

About Kayah (Karenni) State's Mining Sector

1) Map of mining regions in Kayah (Karenni) State



2) General information about mining in Kayah (Karenni) State

Myanmar is a country rich in a number of natural resources including oil, lead, zinc, tin, tungsten, jade, antimony, gold, coal, sapphires and rubies. One area located on Myanmar's tin and tungsten belt is the mountainous region of Kayah (Karenni) State, a region that is also rich in other minerals. Kayah (Karenni) State provides income for Myanmar's mining sector, a sector that is supportive to the nation's development. There has been mining in Kayah (Karenni) State since prior to the British colonial period. The minerals of tin, tungsten, antimony, limestone, marble, coal and gold have all been extracted from the state by local people, local companies, outside companies and foreigners to benefit their respective economic interests.

The main area of Kayah (Karenni) State for the extraction of tin and tungsten is the Mawchi region located in Phasaung Township of Bawlawke province. The Mawchi mine has been in operation for over 200 years according to some documents. It was originally founded by the British government but it is now operated and under the control of the Myanmar government. Previously, Mawchi mine was a high-quality international mine extracting tin and tungsten. During the First World War, documents suggest that as a result of high need, the mine was extracting an average of between 20 and 50 tonnes of tin and tungsten ^{Ref:1}, every month. During the 1930s, Mawchi mine was the highest tungsten producing mine in the world and at that time, Myanmar was extracting around 60% ^{Ref:2} of the world's tungsten from Mawchi mine.

Antimony extraction has occurred extensively since 2012 in the townships of Loikaw, Shadaw, Mese, Demawso and Pruso. Investments in antimony mining are led by stakeholders from the government and ethnic armed organizations with ceasefires. As well as militias and business people, there are also foreigners cooperating and involving in the antimony mining sector. Since 2010, eight (8) companies have been involved in antimony mining including Taw Win Diary Company, Thein Myat Lone Mining Company, Thu Ra Kan Chone Company, Kayah Golden Gate Company, C1 Company, Htee Day Star (Hti Nay Kyet) Company, Asia Pacific Agriculture Company, Aung and Saw Family Company and Khon Htwe Pan Pho Company. These groups not only extract antimony from Kayah (Karenni) State but also from wider surrounding areas and border regions including Shan State.

References:

Ref:1 H.L CHHIBBER, The mineral resources of Burma 1934, Page.186

Ref:2 Burma's rising star, <https://www.geolsoc.org.uk/Geoscientist/Archive/February-2015/Burmas-rising-star>

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Stone mines are mainly located in Loikaw Township and Kayah (Karenni) State is well known as a marble producing region that exports marble widely across Myanmar. The government previously oversaw the extraction of marble. Although the government later ended their involvement in marble, public companies continued to extract marble. Currently, the extraction of marble by companies has almost ended.

Although there is coal found in Loikaw, Bawlekhe and Demawso Townships of Kayah (Karenni) State, coal extraction is scarce as the coal is too soft and not mature enough. There is one coal mine in Lawpita region of Loikaw Township but it is not currently operating. Moreover, near to Loi Nan Pha Village of Demawso Township, there is a coal factory but it is not currently operating.

Kayah (Karenni) State also has a refinery plant for tin and tungsten. The plant was constructed in 1989 – 1990 and after its completion in 1990; it took ownership of the number 2 mining site in 1991 – 1992. Between 1999 and 2011, the refinery processed 898.25 metric tonnes of tin and tungsten. After 2011, the refinery was briefly suspended due to scarcity of raw materials. In 2012, the refinery was let out by tender for a public company to take a long-term lease. On November 7th, 2013, Myanmar Golden Bonanza Services Co. Ltd received the rights to lease the tin and tungsten refinery with 95% of the investment coming from the Chinese company, Hunan Jin Mu Industrial Co. Ltd and the remaining 5% from local investment. Myanmar Golden Bonanza's initial permit for the tin and tungsten refinery allowed them to operate the refinery for fifteen years; after that they had the option to extend for an additional five years for a maximum of three times. This made the lease reach to a potential total of thirty years. In 2017 in Lower Mawchi village of Mawchi region, another refinery was constructed and has just started operation. Although these refineries are operating, it is still difficult to get exact information and accurate figures on the amount of tin and tungsten that is extracted.

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Myanmar Golden Bonanza Services Co Ltd, tin and tungsten refinery plant in Ye-ni-Kan village, MaHtaWKhu tract, Loikaw.



Tin and tungsten refinery plant in Mawchi (Augt-Ywar) village.

3) Stakeholders in Kayah (Karenni) State's mining sector

Mining projects in Kayah (Karenni) state not only include some local people but also the union government, state government, ministry of mining, military, ethnic armed organizations, business owners from inside and outside of the state, companies and foreign individuals. Most of the mining areas in Kayah (Karenni) State are in territories under the control of ethnic armed organizations so these organizations can assert their control in multiple ways. Therefore, the stakeholders in the mining sector that receive the economic benefits are involved in politics and have power. The mining mainly benefits the stakeholders but for the local people, it has severe impacts upon socio-economics, environment and conflict.

Kayah (Karenni) State's mining sector is under the management of No.2 Mining Enterprises which is governed by the Kayah State ministry of mining. Moreover, the government and the ceasefire ethnic armed organizations, Karenni Nationalities People's Liberation Front (KNPLF), Karenni National Solidarity Organization (KNSO), Kayan New Land Party (KNLP), Karenni National Peace and Development Party (KNPDP), Karenni National Democratic Party (KNDP) and Karenni National Progressive Party (KNPP) are stakeholders in the Kayah (Karenni) State mining sector. There are not only business people from Kayah (Karenni) State but also foreign business persons including many Chinese working in the Kayah (Karenni) State mining sector and all of these groups are cooperating, directly or indirectly for economic benefits. Specifically, foreigners from China are the largest stakeholder in antimony mining; and tin and tungsten mining. According to information from the local people, there are hundreds of Chinese people staying in the region's natural resource rich areas.

After 2012, a lot of foreigners, particularly Chinese, rapidly entered the mining sector in Kayah (Karenni) State and this was clearly evident in Loikaw and Mawchi Mining Region. Access to information on how these foreigners received permission from the government to enter and work in the mining sector in Kayah (Karenni) State remains very limited for the local people and civil society organizations working on these issues.

From times prior to 1830, the mining sector in Kayah (Karenni) State, although not implemented on a large scale, had been sufficient to provide sustainable livelihoods for the local people. After the British government took control of Myanmar in 1830, the British government expanded the mining sector in Kayah (Karenni) State. Moreover, in 2013, an Australian Company, Eumerella Resources Company Limited ^{Ref:3}, in partnership with a local company, Mawsaki Company, approached the state economic commission to make an

References:

Ref:3 Resource Emermaul Company Limited (<http://www.proactiveinvestors.com.au/companies/news/135756/eumeralla-resources-seeks-to-explore-for-tin-and-tungsten-in-myanmar-45035.html>)

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investment; 70% of the project would be provided by these groups and 30% would be provided by Myanmar Energy Resource Group. In spite of the viewpoints and concerns of local people and civil society organizations, Mawsaki company approached the government for a permit to operate on up to 400 square kilometers (98,842.1526 acres). The state government representative then permitted and granted them usage rights for up to 202.35 square kilometers (49,866 acres). However, they still had to wait for the permission of the union government. Later, Mawsaki Company cancelled the project and ended their involvement in the mining sector. Currently in Kayah (Karenni) State's mining sector, the stakeholders cooperating in the mining sector include the state mining department; Kayah State Mining Company Limited and their partner companies; local companies; the public; and also, ethnic armed organizations that have signed ceasefires with the government.

*“What we local people feel is that this place is shaded and
it is comfortable to rest so they come here to rest.
Yet when they return home, they cut down not only the branches
but also uproot the whole tree”*

4) About those who has the permit and businesses' rights in Kayah (Karenni) state's mining sector

Those who currently have mining rights in Kayah (Karenni) State's mining sector either have money or power. Moreover, some of the groups with mining rights and some influential persons cooperate with foreigners to mine in Kayah (Karenni) State. According to the list of mining right's holders of Mining Enterprise Number 2, applications to access mining rights need to be made to the Ministry of Mining (NayPyiTaw). Mining of tin, tungsten or antimony in Kayah (Karenni) State requires the approval of the Ministry of Mining (NayPyiTaw) under Mining Enterprises Number 2; while rights for mining of limestone, sand and other stones may be provided by an order from the relevant department at the state level. Moreover, companies with large-scale investment projects may sub-license to local businesses.

Those who hold mining rights in Kayah (Karenni) State must provide rental fee payments to the mining department based on the size of the project, a proportion of the materials mined, and take responsibility for other administrative tasks. When mining operators' projects expire, they must present evidence on their company to the concerned ministry in order to proceed with an extension of mining rights. Although mining rights holders are required to conduct mining in good faith and according to the regulations, enforcement of the mechanisms to enforce transparency, responsibility, accountability and hold investigations into mining projects' social impacts is weak during the implementation period.

According to the ministry of natural resources and environmental conservation, up until June 2018 in the Kayah (Karenni) State mining sector, the ministry of natural resources and environmental conservation had approved 21 projects: one for large scale tin and tungsten extraction, 14 for rights to small scale tin, tungsten and antimony extraction; and 6 for tin, tungsten and antimony exploration and analysis. Moreover, rights for two tin and tungsten projects and two limestone projects had been rejected. One of these rejected projects was a mega project requested by the Kayah State Mining Company Limited.

The mining of gold, tin, tungsten, antimony and other minerals in Kayah (Karenni) State is under the supervision of the Number 1 and Number 2 Mining Enterprises. Mining Enterprise Number 1 supervises antimony, lead and mixed lead while Mining Enterprise Number 2 oversees the mining of gold, tin and tungsten. According to a ^{Ref:4}2018 report on mining investment opportunities in Kayah State, there are tin and tungsten mining on an area of 7,024 acres and within this, there is small-scale mining on an area of 722.4 acres and testing on an area of 583.3 acres.

Mining rights for Mawchi Tin and Tungsten Mine are approved for a period of one year; this is a change from a period of five years in 2015. Moreover, the Ministry of Natural Resources and Environmental Conservation has reduced Kayah (Karenni) State's tin and tungsten quality definition from 65% to 55%.

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Currently, the situation of the miners and mining companies cooperating and benefitting from Kayah (Karenni) State's Number 1 and Number 2 mines are detailed below.

Ministry of Mining Number 1 (Antimony Production)				Ministry of Mining Number 2 (Tin and Tungsten Production)				
Item	Financial Year	Productio n (Tonnes)	Remark	Item	Financia l Year	Production (Tonnes)		Remark
						Large	Small	
1	2011-2012	840		1	2011- 2012	539.04	85.81 43	
2	2012-2013	1794		2	2012- 2013	510.5578	43.57 42	
3	2013-2014	1309		3	2013- 2014	361.0747	191.7 653	
4	2014-2015	220	April - July	4	2014- 2015	134.1329	68.93	April - July

(Source – 2018 report on Kayah State investment opportunities)

Figure (1): Kayah State Number 1 Mining Enterprises and partners update on antimony mining

Item	Company Name	Antimony extracted (Tonnes)
1	Thu-Ra-Kan-Chun	1384
2	Thein-Myet-Lone	911
3	KhonThwePwanPoMu Myanmar Company	313
4	Kayah Golden Gate Company	560
5	Sea One	454
6	Hti Day Star	641
7	Kayan Mining Company	90
8	Asia A & T	240
	Total	4566

(Source – 2018 report on Kayah State investment opportunities)

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Figure 2: Kayah State Number 1 Mining Enterprises and partners update on lead and mixed lead mining

Item	Company Name	Antimony extracted (Tonnes)
1	ThuWannaShwinSin	250
2	Kayah TarNi	250
	Total	500

(Source – 2018 report on Kayah State investment opportunities)

Figure 3: Kayah State Number 2 Mining Enterprises and partners update on tin and tungsten mining

Item	Company Name	Antimony extracted (Tonnes)
1	Kayah State Mining	390
2	Kayah TarNi	150
3	Ye Htut Kyaw	50
4	Leh Mu Kho	50
	Total	640

(Source – 2018 report on Kayah State investment opportunities)

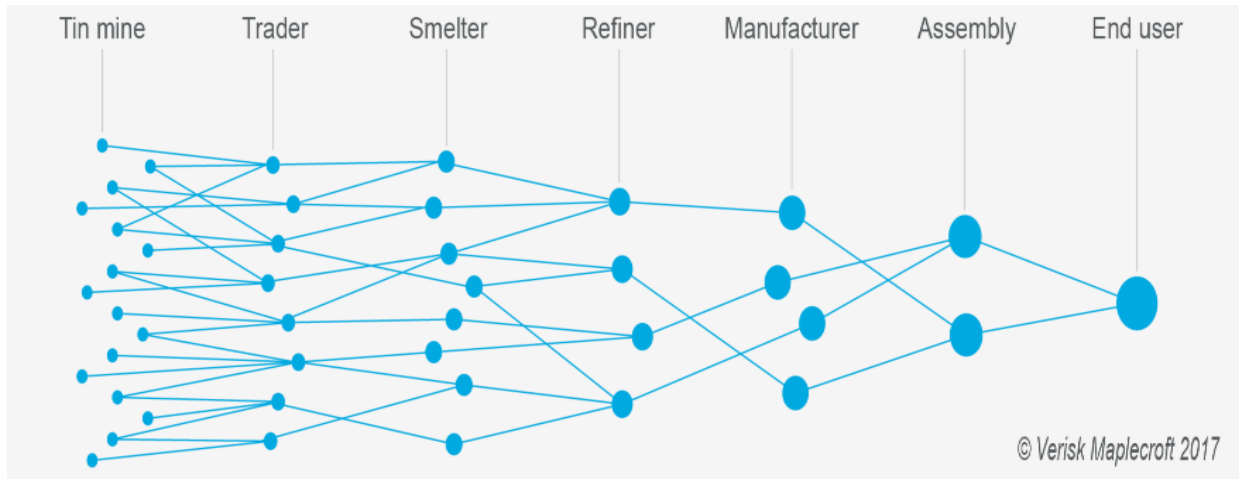
5) Kayah (Karenni) State's mining sector supply chain

Only some of the minerals extracted in Kayah (Karenni) State go towards the state's development; most of the minerals are exported out of the state. In the past, local people used limestone, sand and stone for their personal businesses but recently, businessmen have entered these economic areas. The antimony, tin and tungsten extracted from the projects run both by companies with permission from the government and local businesses with sub-licenses are mostly exported out of the state particularly to other countries.

Due to the many steps to export minerals from the state, minerals are exported both legally and illegally. Tin and tungsten are extracted from Mawchi by not only the company that has the right to extract tin and tungsten but also companies with sub-licenses and local mine-shaft owners. The local mine-shaft owners must provide companies with a calculation of the amount of raw tin and tungsten extracted from their mines during designated time-frames. The company must then provide 30% of the tin to the government. The remaining amount is sold either by sending to export markets outside of Loikaw, to export markets in Mandalay or to other foreign markets. The company that holds the rights from the government sells either to middlemen in Loikaw, Mandalay or other markets. Within this process, some companies refine their tin and tungsten at either the Loikaw Tin and Tungsten Refinery Plant or the ThanLwin Tin and Tungsten Refinery Plant and sell to export markets or provide to Mining Enterprises Number 2. Most of the tin and tungsten is sold on the black market at the Chinese border. Approximately 94% of Myanmar's raw tin and tungsten is sold through these steps in Yunnan Region of China and then refined and distributed to the whole world. Yunnan region of China not only supplies for the high demand of tungsten in China but also for the global market.

According to the worldatlas website, in 2014 ^{Ref:5}, Myanmar was the world's sixth highest producing nation for tin extracting 11,000 metric tonnes. In 2013 ^{Ref:6}, Myanmar's tungsten extraction was 13th in the world extracting an estimated 14,000 metric tonnes. With regards to antimony, Myanmar extracted approximately 3,000 metric tonnes in 2012 ^{Ref:7} and this increased to 9,000 metric tonnes in 2017 making it the 7th highest producer in the world according to statista website. According to the website of Number 2 Mining Enterprises, at the second auction of the 2017 – 2018 Financial Year, 3 companies from Vietnam, Singapore and China respectively, successfully bid for over 230 Metric tonnes of tin and tungsten. It is however very difficult to know what percentage of the tin and tungsten extracted from Kayah (Karenni) State goes to the Number 2 Mining Enterprises and what percentage is traded illegally on the black market. According to recent documents from the International Tin Association Website dated February ^{Ref:9} 2018, China imported 19,561 tonnes of tin during January 2018, of this amount, 19,486 tonnes originated from Myanmar.

GRAPHIC ON STEPS IN THE SUPPLY CHAIN PROCEDURE



References:

- Ref:5 <https://www.worldatlas.com/articles/leading-tin-producing-countries-in-the-world.html>
- Ref:6 United States Geological Survey (USGS) Minerals Resources Program (<https://www.indexmundi.com/minerals/?product=tungsten>)
- Ref:7 <https://www.statista.com/statistics/264958/antimony-production/>
- Ref:8 http://www.mining.gov.mm/ME-2_mm/1.ME-2_mm/1.ME-2_mm_Menu_1240/Tender%20Success.jpg
- Ref:9 <http://www.internationaltin.org/china-ore-imports-fall-sharply-in-february/>

6) Transparency and accountability for environmental and human rights impacts in Kayah (Karenni) State's mining sector

The mining sector in Kayah (Karenni) State is under the administration of the Ministry of Mining's Number 2 Mining Enterprise Company. However, only limited information on this sector is made publicly available. There are also many adverse impacts from human rights and environmental abuses occurring as a result of projects in the mining sector. Although the mining projects are causing human rights and environmental issues the individuals, companies and groups involved in the mining are not taking sufficient responsibility or accountability for them. Moreover, the mining stakeholders are restricting and using oppressive mechanisms as a threat to suppress advocacy on the impacts of mining projects to indigenous people's rights by the local people and Kayah (Karenni) State based civil society organizations.

In the Kayah (Karenni) state mining projects, for the local people to implement mining, they must work with groups or companies operating small-scale or large-scale mining projects permitted by the government. The authority and control of the government organizations such as the state and union level mining departments are limited by the companies that are involved in mining in Kayah (Karenni) State. Moreover, when permission for projects is provided, there is no transparency on the mandate or finances so it is easier for companies with existing connections, power or money to access opportunities. Additionally, the organizations that are involved in the rights-holding companies can impact the human rights and environment of the local people without having to take responsibility or be held accountable because of weak mining laws, weak rule of law and an unstable political situation.

Any permitted work to explore, test or extract tin or tungsten from Mawchi by large or small companies must be applied for by making an application according to the rules and regulations of the Number 2 Mining Enterprises Company. During implementation, the company must then use the permit from the concerned ministries and groups that expresses their agreement. Within it, the permit requires letters of support from the village tract administrator and at least ten villagers. Even though for this step, prior to implementation, companies need letters of support from the village tract administrator and ten people, there is no transparency in this process. This allows for them to take agreement either through providing the concerned people with economic benefits for their agreement or through lobbying the local people to approve the project without sufficient information on its impacts. One villager from Mawchi region gave their opinion on companies getting approval from the village tract administrator and ten villagers.

The villager said, "It shouldn't be that 4, 5 or 10 people can provide agreement to the major effects on the environment of these mining projects. We did not have the information about the project when it was planned, just when it arrived. Now, our village leaders know that we need to be informed because we can see the projects are causing a lot of impacts to our environment.

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The reality is only the head of the village was informed. Additionally, they just get letters of approval from some people that support the project and some of the relatives of the head of the village. Actually, this impacts our whole village. Therefore, we all need to be consulted and agree beforehand.”

Even though accessing rights to explore, test or extract minerals requires an agreement between the person that owns the land and the person that is purchasing the land, companies seeking to explore, test or extract minerals are not transparent in the consultation process and coerce and pressure local people. Moreover, the areas where companies are currently mining does not match with the distance limitations set out in the rules and regulations within the mining law and the mines are encroaching on the local people’s hardwoods, orchards, upland and protected forest. Mining projects are not transparent because the companies with the rights to explore, test or extract do not practice procedures to get the free, prior and informed consent of all of the local people in the mining areas. There are further challenges and restrictions for local people to access the information about exploratory, testing and extractive mining projects and there is no preemptory information about the concerned company’s documentation. Moreover, there is no information about the project’s stakeholders.

As a result of mining exploration, testing and extraction, although business people, companies and project stakeholders receive many benefits, the local indigenous people’s environment is damaged and the projects force them to lose their socio-economic rights such as human rights and environmental rights. There is major environmental degradation caused by the mining projects; it is not only the local indigenous people in mining areas that have lost their protected forest, but also indigenous people in other regions from the mining projects taking timber from their regions as necessary to implement projects. Moreover, the mining projects are not implemented systematically; mining waste is entering into the local people’s creeks impacting the water, water sources and aquatic species. Some companies are destroying villagers’ agricultural plantations and sacred areas whilst conducting their mining activities without taking any responsibility or accountability. One villager made the below comments about antinomy mining in their region.

“Previously, they agreed on which places were restricted within the village. However, later they went on to the restricted areas and mined on our village’s forest land and cemetery. They destroyed our forest; we could not accept this as it was a place that we had treated as sacred for generations so we could not continue with them. Later, all of our land would be gone.”

The mining companies are not widely distributing information to the local people on the impacts of projects to get their agreement, providing the exact project plan, or developing any environmental mitigation measures. Companies permitted to implement mining projects do not have environmental management plans and are resolving cases on an ad-hoc basis. Moreover, mining companies are only concerned with their economic benefits and this is causing environmental degradation in mining areas through the use of heavy machinery, over-extraction and acting without adequate oversight of environmental regulations. Furthermore, as a result of the dumping of waste from the mining refinery plant into the Balu Creek in

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Loikaw; Kayah State; in 2015, MaHtawKhu village held a discussion and their administrator went to meet with the responsible persons to investigate. Next, in May ^{Ref:10}2016; in NwaLaWo village tract, an antimony refinery in an industrial zone owned by an ethnic armed organization was closed down because the local people submitted a complaint letter to the responsible persons regarding pungent waste emanating from the plant.

As a result of mining, local people in mining regions are facing not only environmental degradation but also human rights abuses. The Ministry of Mining did not follow the appeal process and neglected to listen to the local people's concerns in order to provide permits to the companies. Moreover, mining companies are damaging and degrading areas such as local people's homes, buildings, farmland, perennial crops and forest on the land adjacent to their mining projects without providing any remedies or compensation. Although those local people are demanding their rights to remedies, they are facing threats preventing them from exercising their rights. Though the local people can meet and are free to report the human rights abuses, their security cannot be guaranteed and they feel unable to report human rights abuses because some of the stakeholders are powerful and there are communication challenges in rural areas. The mining companies that are under the Ministry of Mining are primarily responsible for exploration, testing and mining in the concerned areas and they should take full responsibility and accountability for the consequences of projects. Therefore, prior to giving permission for any exploration, testing or extraction, the ministry should analyze carefully and fully all documents according to the rules and regulations. They must be diligent because the mining companies have previously breached the rules and regulations and used improper ways in order to access permission. Moreover, they must be responsible and accountable for every benefit and impact that occurs at each step as a result of any breaches of rules and regulations by the mining company that is exploring, testing or extracting. There are also weak mechanisms for companies to follow relating to supervising, regulating and assisting implementation of projects.

Moreover, there is weak transparency and accountability in the obligatory actions and responses of participating companies and organizations to human rights and environmental abuses emerging as a result of their business activities. Based on this, one community member spoke out about the rights related to mining in the region and the lack of responsibility and accountability of the mining businesses and companies.

They said, "Under the former military government, they did as they pleased without informing the public. Under the current government, that is yet to change. For accessing permits, the companies used unjust and deceitful methods. The mining companies aren't accountable; because of them, there are human rights abuses and environmental degradation. Before the project, they told us how good the project would be. It is nothing like they said. Actually, they are not accountable."

Reference:

Ref:10 <https://web.facebook.com/elevenbroadcasting/videos/1726902624232881/>

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Currently in HtoMuKee area of Mawchi Region, workers, mostly of Chinese ethnicity, are extracting raw tin using open-pit methods. Within this area, there are many workers called from other regions to work on the mining projects. The areas are only worked by migrant workers and local people's access to them is restricted and blocked. In order to access those areas, you must pass a number of gates guarded by armed organizations and the gate security will only allow one to pass with the requisite permission. The Chinese are managing and operating the mining in these areas, day and night. Below is information according to a local person who arrived to the area that has been described above.

He said "Although, we heard that a group has brought that land from the owner, we know that the mining is done in cooperation with the Chinese. We heard that they must give over 100,000,000 MMK for the lease to an armed group. After that, the armed group takes responsibility not only for the location's security but also for preventing photos and news from leaving the area. We have seen a lot of machinery enter and a lot of buildings being constructed." Therefore, the design of the restrictions prevents even the local people from accessing news and information from these areas.

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An area of Molo creek near to KheMaPyhu village which has been damaged by mining.



An open-pit tin and tungsten mine in a mining area.

7. Myanmar laws relating to the mining sector

The companies and businesses that are exploring, testing and extracting in Myanmar's mining sector must take responsibility to prevent unremedied impacts to the local people in accordance with national laws, procedures and rules. Yet the current national laws, procedures and rules are weak to protect local people from the negative impacts of mining and they afford rights to businesses and companies.

The Vacant, Fallow and Virgin Land Management Laws of 2012 provided rights to four types of businesses including extractive industries. Moreover, under this law, the land managed by the local indigenous people of the ethnic regions for generations would be defined as so-called 'Vacant, Fallow and Virgin Land'. The agricultural land, forest land, resting rotational farmland and other forms of land that ethnic people have managed under their customary land management since their ancestors would now be defined as so-called 'Vacant, Virgin and Fallow Land'. According to the 2012 Farmland Laws, all of the land within the country must be registered under the government law. If a land dispute arises, any person that holds the respective land's registration document shall hold the legal rights. Moreover, according to the Vacant, Fallow and Virgin Land Management Law, groups have the right to apply for permits to use land for up to thirty years. Permits may be issued for an area not exceeding 5,000 acres and multiple permits shall not exceed a total area of 50,000 acres. For mining businesses, they can access rights by following procedures outlined according to the laws of the Ministry of Mining. To facilitate economic development, businesses may apply for the right to work on any land that does not have government registration and is as such defined as Vacant, Fallow and Virgin Land; yet on the other hand, the indigenous people are facing the loss of the land and natural resources that they have lived on and managed in accordance with their customary systems.

The 2016 National Land Use Policy states that to use land defined within land use zones such as commercial zones, industrial zones and mining zones, those who currently benefit from the area must be consulted with, notified and provided with remedies. To relocate to and implement work in these zones, applications must be submitted with the total area of the zone's district to be used and recommendations from the township and either the village tract or quarter. Although the National Land Use Policy is already over two years old, there has not yet been effective implementation of it. This National Land Use Policy is also still weak at ensuring sufficient protections for the land rights of indigenous people and hillside farmers. Despite, the current government being led by the democratically elected, National League for Democracy, the amendments that have been made to the land laws have not been made based on the National Land Use Policy.

Under the 1996 Mining Laws, to receive a permit so one may explore, test or extract minerals requires the agreement through consultation of not only the concerned ministries but also the Ministry of Forestry that issues the permits and oversees areas defined as protected or reserved areas. Under the mining procedures enforced in February 2018, there are three types of mining extraction that businesses may implement; large-scale mining of over one square

kilometer (247.1 acres) up to 1,200 square kilometers (518,920 acres); medium-scale mining of up to one square kilometer (247.1 acres); or small-scale mining of up to 20 acres. Although under the past law, only medium and large-scale mining required permission, the current law requires small, medium, and large-scale mining to seek permits. Moreover, for mining businesses to extract minerals, the mining law requires that mining businesses show a recommendation letter providing the agreements; including permission to use land and water; benefit rights; and other related rights, through consultation, of the potential affected persons living in the area who hold the ownership rights, usage rights, agricultural rights. However, the mining businesses and the stakeholders that are involved in mining are neglecting these requirements. The people and groups that are providing the permits for the mining projects are colluding with the mining stakeholders weakening the effectiveness of the laws relating to extractive rights. Additionally, the law itself is weak and is in favor of the mining businesses.

The environmental preservation law was brought into force on March 30th, 2012 and included content requiring that there must be systematic supervision and safeguards for environmental preservation, environmental monitoring and to prevent projects causing loss of natural resources and that which could be used for sustainable benefit; all projects must also be implemented systematically to not create issues for environmental preservation in the continual economic development of the nation. On December 25th of 2015, information regarding environmental procedures and investigations based on different types of project were added to this law requiring implementation of Environmental Management Plans, Environmental Impact Assessments and Initial Environmental Examinations. Though both the departments related to mining and the businesses in Kayah (Karenni) State are required to show the environmental impact of each project, the implementation of Environmental Impact Assessments is very weak regardless of whether the project is large-scale or small-scale. The companies who conduct Environmental Impact Assessments and Initial Environmental Examinations are also not publishing their findings transparently to the local people.

For permission to implement mining projects, after the proposing individuals or groups apply to the Ministries of Forestry and Environmental Conservation, according to the license, they may be required to conduct an Initial Environmental Examination, Environmental Impact Assessments or draft Environmental Management Plans. Not only are IEEs, EIAs and EMPs not always required, it is up to the discretion of the individual or group to select the organization to conduct IEEs, EIAs and EMPs and approval on their selection must be sought from the ministries of forestry and environmental conservation. In a case where the ministries of forestry and environmental conservation do not agree, the applying individuals or groups may choose to reselect. After the IEEs, EIAs, and EMPs are completed, the organization that has conducted them must inform the general public of the findings and submit the report to the ministries of forestry and environmental conservation. After this, on inspection of the report, if the ministry of forestry and environmental conservation is not satisfied, the report shall be amended and once the ministries are satisfied, it may be approved. Furthermore, after granting the approval, the ministries of forestry and environmental conservation must provide a public explanation of their approval decision and details on the Environmental Compliance Certificate (ECC) that they provide.

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National investment projects, as enforced by the 2016 Investment Law, on investment rights and the long-term lease of land or buildings, states that on accessing rental rights according to the defined requirements, lessors have the right to a document of leasehold for ten years with an optional extension of ten years. In addition, the investment categories are broad and as such do not provide limitations or prohibitions. According to the investment law, an investment commission shall be founded with a job description; this job description does not include any mechanism to hold them accountable for abuse of power or corruption. This assists all investors and those cooperating with them, while on the other hand, it neglects the impacts to the local people's socio-economic situation and environment. According to that law, they must appoint the local citizen and provide them full rights, yet local business people always neglect these rules and regulations as there are no procedural safeguarding mechanisms and there are no rights for workers to unionize and limitations set on other groups that seek to protect workers.

This law's stated objective is to support responsible and accountable economic development, develop human resources, improve job opportunities and ensure investment to is in accordance with international norms, but in fact this law protects investors and their businesses from scrutiny.

"They [the government] must provide for us like this. They need to explain to us, how many companies are coming. After that if the local people agree for them [the companies] to enter, they [the government] may allow them [the companies] to come"

One local person at a conference with the President of the State Parliament and the public of Mawchi Region in July 2018

8 International Mechanisms related with human rights and economics

The Myanmar government like other countries must ensure that its citizens fully enjoy their human rights. Within Kayah (Karenni) State, investors, especially those investing in the regions of the ethnic people, must follow not only the national laws concerning local people and indigenous people but also international mechanisms related to human rights and economics. This requires the Myanmar government to provide oversight on effects; make rules and procedures; and take action to ensure that for the national citizens, local people and indigenous people; businesses are responsible and accountable; remedies are available; and protections are afforded to compensate for human rights abuses.

Myanmar must, in accordance with its membership of the United Nations, implement and follow the 2007 United Nations Declaration on the Rights of Indigenous People, UNDRIP. UNDRIP provides and guarantees full enjoyment of human rights to indigenous people. The government must allow, respect and protect the inherent rights of indigenous people. This declaration recognizes that indigenous people should be afforded full protection of their rights; this includes human rights, management rights, and governance rights when implementing development. It relates to the right to be informed, right to freely access information, right of free ownership, right of recognition of customary law, rights to self-govern their land, natural resources and boundaries, right of inclusion in the decision-making process and cultural rights. The United Nations Declaration on the Rights of Indigenous People declares in section 32, below, that protections are afforded to indigenous people for their rights to freely manage, use and govern their land, territory and natural resources.

Section 32(a) Indigenous peoples have the right to determine and develop priorities and strategies for the development or use of their lands or territories and other resources.

Section 32(b) States shall consult and cooperate in good faith with the indigenous peoples concerned through their own representative institutions in order to obtain their free and informed consent prior to the approval of any project affecting their lands or territories and other resources, particularly in connection with the development, utilization or exploitation of mineral, water or other resources.

Section 32(c) States shall provide effective mechanisms for just and fair redress for any such activities, and appropriate measures shall be taken to mitigate adverse environmental, economic, social, cultural or spiritual impact.

Moreover, the International Labour Organization Convention Concerning the rights of Indigenous and Tribal Peoples (ILO-C.169) affords protections to indigenous people to freely manage, govern and maintain their land and the natural resources connected to their land.

Section 15(1) The rights of the peoples concerned to the natural resources pertaining to their lands shall be specially safeguarded. These rights include the right of these

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peoples to participate in the use, management and conservation of these resources.

Section 15(2): In cases in which the State retains the ownership of mineral or sub-surface resources or rights to other resources pertaining to lands, governments shall establish or maintain procedures through which they shall consult these peoples, with a view to ascertaining whether and to what degree their interests would be prejudiced, before undertaking or permitting any programmes for the exploration or exploitation of such resources pertaining to their lands. The peoples concerned shall wherever possible participate in the benefits of such activities, and shall receive fair compensation for any damages which they may sustain as a result of such activities.

Section 16(2): Where the relocation of these peoples is considered necessary as an exceptional measure, such relocation shall take place only with their free and informed consent. Where their consent cannot be obtained, such relocation shall take place only following appropriate procedures established by national laws and regulations, including public inquiries where appropriate, which provide the opportunity for effective representation of the peoples concerned.

“The companies that come here are weak to listen to the voice of our local Mawchi people. There is weak accountability and responsibility. We cannot stop them by saying don’t mine. But, how much accountability and responsibility will there be? We have learnt about FPIC and EITI. After they come to a place or region for work, they must get the voices of the local people. Now, it is not like this. We don’t know what form they enter with or their business in our region”.

The Myanmar government must initially inform and give notice to the indigenous people of protections for the land and natural resources that they own, manage and use. They must take responsibility for improving actions and investigations into the real effects associated with economic projects; and amend laws to protect, prevent and remedy human rights abuses occurring as a result of business activities. The United Nations Guiding Principles on Business and Human Rights require that there is better information for the safeguarding and respect of human rights. Moreover, a further guiding document for international principles on economics and human rights is, ‘John Reggie’s Guiding Principles’. These principles require that governments must take action to ensure that there are accessible remedies for compensation and that businesses follow the principles and state protections against human rights and environmental harms. Additionally, businesses all over the world must follow the equator principles, a basic set of rules and requirements for stakeholders to adhere to.

Additionally, during the period of the former president of Myanmar, U Thein Sein, the government ratified the Extractive Industry Transparency Initiative, an initiative aimed at improving transparency in the natural resource extraction sector. According to the EITI procedures, there must be transparent documents on management, tax collection, tax

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management, extraction measurements and a wide distribution of notice on changes in implementation. Moreover, investors need to cooperate with information provided to them from citizens and civil society organizations. Therefore, the Myanmar government must fully implement, cooperate and apply the international mechanisms that relate to human rights, economics and the environment.

On October 6th, 2017, the Myanmar government signed the International Covenant on Economic, Social and Cultural Rights (ICESCR) and from that date, is required to enforce the provisions of the document within the nation. The ICESCR safeguards the rights of all citizens to fully enjoy health and education and enforces protections on security as well as the rights to fulfill basic needs such as food, water and clothing.

Despite the Myanmar government signing a number of international agreements concerned with transparency, environment; social and cultural issues; economics, and human rights, there has not been full enforcement. Additionally, even though a number of international mechanisms related with human rights remain unsigned, the government should still respect them. For the actual realization of the full enjoyment of human rights for Myanmar's citizens, there must be safeguards to ensure full enforcement of both the law and relevant rules and procedures. Moreover, we must apply pressure for responsibility and accountability to prevent trans-boundary investment from damaging citizen's rights and for economic activity to be monitored to ensure responsible development.

“ We must have in our hands that the authority to self-determination and sovereignty for free management rights over the natural resources that we own”.

Part 2

A case study on Mawchi Tin and Tungsten Mine

The second part of this report on the Kayah (Karenni) State mining sector will illustrate research on the human rights and environmental situation of Mawchi Tin and Tungsten mine, a mine that has been in use for over 100 years.

The Mawchi Mine located in Mawchi region in Phasaung Township of Kayah State has been in operation for over 100 years. Before the British extracted tin and tungsten from the mine, it was extracted by the local people. During the First World War, Mawchi Tin and Tungsten Mine was the main source of tin and tungsten for the British and at that time the largest producing tin and tungsten mine in the world. Mawchi region was known as ‘Second England’ and until today, companies, outsiders and migrant workers arrive to Mawchi region for work.

Mawchi Tin and Tungsten Mine is located in a region within Myanmar, a nation with an ongoing civil war of over sixty years, the longest running civil war in the world, and thus progress such as regional development and economics are lagging behind. Moreover, the Mawchi mine is under the control of the Myanmar government, but some mining areas and other areas of the region are under the authority of the Karenni National Progressive Party. Furthermore, the Myanmar government and a ceasefire ethnic armed organization, the Karenni National Solidarity Organization (KNSO), which has transformed into a people’s militia are the primary actors in the region. The Mawchi Mining area is located in an area adjacent to Karen State and it is a very important region for the economic and political interests of stakeholders.

There has been mining for over a century at Mawchi Tin and Tungsten Mine and alongside it there have been project impacts to the environment and natural resources including landslides, deforestation, water spring pollution and plantation degradation. Moreover, at present there are both human rights and environmental impacts. On human rights, local people are facing restrictions on their freedom of movement, economic rights and access to basic health needs and social security.

The indigenous people of Mawchi region are facing abuses from the mining sector but as studies from this report show the Mawchi region is not the only region in Kayah (Karenni) State where the stakeholders are operating businesses. This report will study mining human rights and environmental abuses affecting local people and stakeholders.

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A viewpoint of Ler Pwar Kho (or) Bread Mountain from Ler Kha Loe village

The map of Tin and Tunstun mining in Mawchi



1. Types of Project Stakeholders

(a) Project Name – Mawchi Tin and Tungsten Mining Project (Project at Mawchi Mine)

Mawchi Mining Project is a tin and tungsten mining project currently operating by underground and open-pit systems.

(b) Project Stakeholders, Companies and Consortiums

The stakeholders in the Mawchi Tin and Tungsten Mining Project (Mawchi Mining Project) are the companies with extraction rights under the ministry of mining and Chinese Nationals cooperating with them; sellers from both within and outside the region; and migrant workers. The main companies participating in business at Mawchi Mine are as follows:

1. Kayah State Mining Company Limited
2. Ye Htut Kyaw Mining Company
3. LehMuKo Company Limited
4. Kayah TaNi Mining Company Limited
5. Kayah White Star Company Limited
6. Kayah Golden Gate Mining Company Limited
7. Other Individuals and Consortiums

The main mining operator in Kayah (Karenni) State is the Kayah State Mining Product Company Limited (KMPT), previously known as the Kayah State Mining Trading Company Limited (KMTC) from 1998 to 2002, operating with a ten-year license from 2002. In 2004, the company was moved to fall under the control of the Union of Myanmar Economic Holdings Limited (UMEHL), also known as U Bein, and UMEHL is the sole operator until today. In February ^{Ref:11}1990, Myanmar military leaders founded Union of Myanmar Economic Holdings as a business consortium with a 60% investment from Myanmar military leaders and a 40% investment from cronies. In 2007, UMEHL had a total of 77 different businesses owned by 9 companies and 7 associate companies.

The stakeholders of the KMTC and KMPC business consortiums are comprised of military personnel, former-generals and those concerned with them (also referred to as cronies). Starting from 1998, UMEHL, the military business consortium invested in Kayah State under the name of KMTC by making early investments in the mining sector, the long-distance transportation sector ^{Ref:12} (through Than Myint Thu and other transportation lines) and in marble mining. UMEHL using the name of Kayah Mining Company, is the company that controls the mega-project to extract tin and tungsten from Kayah State. A tin mining rights

References:

Ref:11 Myanmar: The Politics of Economic Reform"(PDF).

Ref:12 Building the Tatmadaw : <https://www.researchgate.net/publication/272092747>

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document shows that from 2014 to 2019, those business consortiums were permitted again to operate over a five-year period on a current mining area of 7024 acres (28.4257 square kilometers) at Mawchi Mine. KMPC's current mining rights expire in February 2019 and they are now planning to extend the mining project.

Beginning in 2017, KMPC has led a plan to excavate a new underground mine under level 5 at level 7 (previously known as level 6). The residents of the region known as YuKhorKho (b) of (13) Khon village tract are worried about what is occurring at Level 7 and the potential damage that the separation of the tunnels and its vibrations will have on their land, buildings and water sources. Even when mining had only just begun at Level 7, the local people's houses shuddered and residents could not sleep soundly; now there are further worries for the long-term disruptions that will be caused by the mining of Level 7. Level 7 is found under the other levels 2, 3, 4 and 5 respectively and so if there is an explosion at another level, the water will pass into level 7 and if the water resources disappear from the other levels, the local people and miners will not be able to rely on the mines. Level 7 is also wider than the other levels.



A new Level 7 mineshaft, run by KMPC

Ye Htut Kyaw Mining Company Limited joined the Kayah (Karenni) State mining sector as a stakeholder in 2011. They currently have permission to conduct small scale mining in the KheMaPhyu creek region at point (4561). This business' Director is Ye Htut Thein who was a military general in charge of Mawchi region for many years and previously was elected as member of parliament for Phasaung Township at the 2010 election as a representative of the Union Solidarity and Development Party. Additionally, he is a responsible person as part of Kayah State Mining Company Limited. Ye Htut Kyaw Mining Company Limited was granted a license to mine at point (4561) for a third annual period from 2016 until 2017. The mining activities are still ongoing and have been renewed since the granting of the one-year license in 2016 – 2017.

LehMuKo Company is working under the leader of the armed ceasefire organization, the Karenni National Solidarity Organization, and has a grant to implement small scale mining to extract high grade tin and tungsten in Mawsaki region, Mawsaki village tract of Phasaung Township. Moreover, another leader of the Karenni National Solidarity Organization, uses the name Kayah White Star Company, has rights granted for small-scale mining of tin and tungsten in the MoLo creek region of Mawchi administrative district. These mining projects are still ongoing and in order to continue, they are now in the process of getting an extension.

Kayah TaNi Company is a business under the Karenni National Progressive Party, an armed organization in a ceasefire agreement signed in 2012 with the government, and was originally granted rights for small-scale tin and tungsten mining in the region of HtiLayKi of Mawsaki village tract between 2013 until 2017. They continue to operate today.

Kayah Golden Gate Mining Company is a business formed by a leader of the armed organization, Karenni Nationalities People's Liberation Front (KNPLF) on entering into a ceasefire agreement with the Myanmar government in 1994. The company was granted rights for small scale mining in Mawsaki village tract.

The Mawchi Mining business sector is made up of powerful companies consisting of powerful stakeholders. In particular, there are Chinese business people working in the Mawchi mining businesses either directly, indirectly or in a personal capacity. Moreover, there are other powerful stakeholders involved such as HtiPwinKan company, KhonNyiNaung company and Myanmar Shwe Yay Win.

"We see Chinese people. Most of the experts are ethnically Chinese. They are often coming here. They work with cars and machinery. They go to that area. How many provide advanced notice to the Ministry of Labor, Immigration and Population? How many of them are nationals? Now, there are about one thousand people here but they cannot speak Burmese language." A local person from Mawchi.

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A signboard prohibiting entry in one of KMPC's mining areas



A Tin and Tungsten refinery in ToeMehKhee area

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One of the mining areas in Molo creek



The inside viewpoint of KMPC's Level 7 mining project

(c) Project Location

Mawchi Tin and Tungsten Mine is located within Kayah (Karenni) State in the eastern part of Myanmar on the ^{Ref:13}3,500 Kilometers long Thai-Malay tin and tungsten belt. The Thai-Malay tin and tungsten belt runs for 3,500 Kilometers from the north of Myanmar's Shan State along the Thai-Myanmar border through Thailand and Malaysia to the southern part of the island of Bali in Indonesia. According to geology, the Mawchi Tin and Tungsten Mine's range is from north – south, of 2.33 miles in length and 0.28 miles in width with an area of 0.685 square kilometers. The Mawchi Tin and Tungsten Project is in Mawchi Region in Bawlekhe District of Phasaung Township, Kayah (Karenni) State located approximately 96 miles from Loikaw, about 40 kilometers from the Thai-Myanmar border and about 250 kilometers from Yangon at 18.5 latitude and 97.1 longitude.

(d) Project Area

According to government documents, the area of Mawchi Tin and Tungsten Mine is 7,024 acres. This project area is based on the original area recognized for implementing this project by Mawchi Mine Limited of 11.25 square kilometers.

(e) Project Duration

According to discussions with local people and other official documents, there have been extractive activities at Mawchi mine for over 100 years. According to the permits of the Mining Department's Mining Enterprise No (2), documents provide a period of entitlement for mineral exploration, testing or extraction. In the early period of Mawchi mining, foreign companies such as a Japanese company, KoBaYaRee Company and a Russian Company engaged in economic activities. In late 1998, there was a domestic economic upheaval and documents on project timeframes show projects were designated to domestic actors.

References:

Ref:13 <http://www.portergeo.com.au/database/mineinfo.asp?mineid=mn406>

Item	Year	Participating Stakeholders
1	1998 – 2002	Kayah State Mining Trading Company Limited (KMTC) began collaborating with the Mining Department.
2	2002 – 2012	In 2012, KMTC changed their name to Kayah State Mining Product Company Limited (KMPC) and signed a contract with the government to work together.
3	2004	KMPC became part of Union of Myanmar Economic Holdings Limited (U Bein)
4	2013 – 2014	Union of Myanmar Economic Holdings Limited (U Bein) formed Kayah State Mining Company Limited under their control
5	2010 – 2014	Kayah White Star started operations
6	2011 – 2014	Ye Htut Kyaw Mining Company started operations
7	2012 – 2015	Kayah Golden Gate Mining Company started operations
8	2013 – 2017	Kayah TaNi Mining Company started operations
9	2014 - 2015	LehMuKo Company started operations
10	<i>Currently</i>	Kayah State Mining Company Limited Kayah White Star Company Kayah TaNi Mining Company Limited LehMuKo Company Limited Ye Htut Kyaw Mining Company Limited Kayah Golden Gate Mining Company Limited

2 Project Features

a) Characterization of natural environment and land adjacent to the project area

Mawchi Tin and Tungsten Mine is located in a mountainous region and is between 3,000 – 4,500 feet above sea level. The region where Mawchi Tin and Tungsten Mine is located also has dense forest where there are plantations of cardamom and orchards. Currently, Mawchi is a region with poor infrastructure and transportation links, though these have been improving since a government development project in early 2012.

b) Project Operation's Situation, Location and Village Environment.

There are 10 villages within the Mawchi mining area in Mawchi administrative region located within Phasaung Township, Bawlekhe District of Kayah State. Some of the villages in the Mawchi region have existed since prior to the commencement of mining and throughout the over sixty years of civil war. Some of the villages have been displaced multiple times

because of conflict but residents have returned and lived in them since late 2010. The Mawchi mining region includes the following villages: LoKaLo, TaungPaw (LoDey), PaThaKee, YayPu, Lower Mawchi, SwaPeh, TaNanLor, YwaTheDoe, DoMuPeh, and BuLoPeh. Presently, mining projects are not only implemented in Mawchi administrative region but also within KawHtuDo village tract and MawSaKee administrative region.

c) Summary of the Project's History

No	Year	Description
1	Up to 1862	The indigenous people of the region work on micro-mining
2	1862 - 1863	As the Mawchi region becomes well-known for tin and tungsten production, Mr O'Riley becomes the first European to come and study the tin and tungsten in the region.
3	1899 – 1900	Later, the British government commissions a report on the Mawchi Tin and Tungsten Mine.
4	1903	In England, the Mawchi Mine Company Limited is founded.
5	December 4 th 1910	The Sawbwa of Bawlekhe, PaBaMin (Ka) PoeByaMin signs a contract with the Mawchi Mine Company Limited granting mining rights for 30 years on an area of over 2,000 acres.
6	1910 – 1914	The Mawchi Mine Company Limited conducts operations.
7	1914 – 1918	During the period of the first world war, mining continues.
8	1919	The mining price falls by 40% and the mining project temporarily shuts down.
9	1919 – 1928	After 1919, extensive work took place to improve and develop the mining sector and in 1928, production increased.
10	1930 – 1940	During the 1930s to support the steady need for Tin and Tungsten in England, the mine was at its highest operations.
11	1939 – 1945	The period of the second world war.
12	1941	The English were losing the second world war and were retreating; the English mining company also left.
13	1941 – 1945	The Japanese Company, KoBaYaRi mined from Mawchi Tin and Tungsten Mine.
14	1945	The Japanese lost the war and the Japanese company left.
15	1946 – 1948	The Mawchi Mining Company returned to work.
16	1948	Ref:14 Just prior to 1949, the Karen revolution began and Mawchi was one of the areas where the Karen National Defense Organization (KNDO) operated. On August 15 th 1948, the KNDO took control of Mawchi region and were the authority in the region from 1948 to 1953.

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17	1948 – 1953	As a result of the civil war, mining was not conducted for five years at Mawchi mine.
18	November 1953	The Burma Socialist Party government took back control of the Mawchi Region.
19	1953 – 1956	The state took back control of the mining.
20	1957	A new Mawchi Mining Company operated by the Myanmar government took over the Mawchi Mine.
21	1958 – 1959	The Mawchi Mine Company left from Mawchi.
22	1959 - 1962	The Mawchi Mine was temporarily rested.
23	December 22 nd 1962	The Myanmar Road to Socialist Party nationalized Mawchi Mine.
24	January 1963	Many Myanmar engineers and geologists conduct work.
25	1963 – 1969	The state government continued operating the mine.
26	December 24 th 1969	A contract of an agreement to operate the Mawchi Mine by a soviet loan is agreed.
27	1970 – 1973	A Russian company operating at the mine has to leave because of fighting between the Myanmar government and the armed organization, KNPP.
28	1974	As a result of political instability, the loan and contract with Russia is suspended and the government continues operating the mine.
29	November 12 th 1975	The armed organization, KNPP, captured six engineers and assassinated five of them.
30	1976	The state continued operations.
31	1977	Permission is granted to mine under the PeiTa system of nationalization
32	1977 – 1986	The state continues operating the project and during that period the use of the PeiTa (Nationalization) system is withdrawn from the mine.
33	1986 – 1988	The state continues operations under the central committee. The government of 1984 – 1985 has the highest production
34	1988	Mining production reduces as a result of national unrest.
35	June 1 st 1998	KMTC (Kayah State Mining Transfer Company) operated the mine for the benefit of the mining department.
36	1998 – 2002	KMTC (Kayah State Mining Transfer Company) continues operations.
37	February 28 th 2002	KMTC changes names to KMPC and contracts to mine for 10 years.
38	2002 – 2012	KMPC (Kayah State Mining Production Company) continues operations.
39	October 1 st 2004	U Bein transfers the mining rights to KMPC, a company that continues to operate for the benefit of the Union of Myanmar Economic Holdings (U Bein).

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40	2004 – 2012	KMPC, a company under the control of U Bein, continues implementing.
41	2012 – 2015	KMPC, a company under the control of U Bein, continues operations.
42	2015 – 2019	KMPC are granted a 5-year extension of their document providing mining operation rights, which are still in use today.

References:

Ref:14 Karen Revolution History – Phu Sgaw Hler Thaw (P.271)

(d) Project's total area and current implementation area

The current area of the Mawchi mining project spans 7024 acres and although originally under the British government an area of 11.25 square kilometers was extracted from, today many companies are operating in the area. There are also many companies operating outside the project area such as Ye Htut Kyaw Mining Company's mining area operating at the point (4561) outside of the Mawchi Mine. Even though the project area is defined, disputes have emerged for many years between the local people and the government and currently, there remain many disputes between them over the current mining projects.

(e) The region's climate

Mawchi Mine is located in a region with a tropical climate, receiving approximately 60 inches of rainfall annually. The period from March to June is the hot season, from July to October is the rainy season and from November to February is the cool season. The temperature varies between a low of 60 degrees Fahrenheit and a high of 95 degrees Fahrenheit. The rainy (wet) season from late May to October is the period with the heaviest rainfall. The Mawchi region is neither too hot nor too cool and it is even comfortable during the hot season. The English employees of the mine in the past even used to refer to it as a second England referencing the region as 'Little England'.

(f) The region's natural environment

The Mawchi region is famous because of the Mawchi mining project but besides tin and tungsten, the region also produces valuable teak and other timber goods. The region has natural forests which are abundant in opportunities for local people to make an income for their livelihoods from the forest goods such as the wild animals and fish in and around the streams. The region of Mawchi mine is abundant in various water sources including fresh water fountains and hot springs. Moreover, the local people rely on the natural resources for a regular income by cultivating the Cardamom hardwood tree.



‘The plenty of natural resources in Mawchi region are under threat as a result of mining projects’

g)The region's environmental management procedures and forms of protection

The indigenous people of Mawchi region are ethnic people who have resided there for generations and until today they protect, preserve and manage the natural resources within their region by using knowledge of natural justice passed down for generations. As mining projects have arrived so has bureaucratic governance mechanisms which are threatening the practices used by the indigenous people for generations to manage their environment, water, land, forest and mountains; despite this, the indigenous people continue to practice their natural resource management systems up to the present day. In relation to natural resources, the local people have rules to follow such as that trees may not be felled near freshwater springs and fences must be built around them, and within restricted areas, hunting is prohibited. To ensure that everyone is able to know these rules they recognize them on signboards and distribute the prohibitions and warnings to the region's villages.

On the topic of natural resource management, one local resident of Mawchi said, *"Our lives have depended on this forest, this mountain, this water and these resources since the time of our ancestors. We recognize and give appreciation to the mountain and the forest. This is because they provide us with our daily livelihood; without them, we would not be here. Thus, we have and will continue to preserve and value what has been passed on to us through generations."*

Moreover, in the Mawchi region local people use the natural resources of their region equitably and reciprocally, where a need to use some natural resources requires the requesting and agreement of the owner of the concerned natural resource. For the freshwater resources that the local people of Mawchi region have depended on for generations, the owner of the freshwater resource grants permission to freely use the water for drinking while for other uses (e.g. washing tin), a tax must be paid to the owner of the concerned freshwater spring.

Furthermore, concerning land management, customary land management systems are still practiced by either village or tribe. Each village share recognized boundaries up to the present day and within these boundaries, they manage their land and natural resources. The land management system practiced in the Mawchi region is known as 'Du' in the Karen language and that system includes within it the trees, water resources, forests, mountains, fish and wild animals upon their land. In addition, anyone who wishes to use the land and natural resources that are under the 'Du' system must seek and receive the agreement of the owner or rightsholder of the resource.

Although the local people have conserved their land and natural resources, the customary management systems that they have conserved them by are under threat from the purchase of local people's land and natural resources for mining projects and the use of other methods to acquire these customary managed lands. In the current situation, companies are taking control of these lands for their own economic benefit through the local people's simplicity, weak knowledge and by other oppressive mechanisms.



Signboard on water preservation in BuLo village

3. Natural resource management strategies and current uses in the region

a. Distance of project working area from water sources

At the Mawchi Mining Project location, there are five main water sources found at level 2, level 3, level 4, level 5 and KB1. These water sources drain down to a water storage of 140,000 gallons located in TaungPaw village (In the past under the British mining, it was used as a swimming pool) and after use by the village it passes through rocky channels and is reused for cleaning metals. Moreover, in order to prevent water difficulties caused by landslides and destruction on water ways, there is a levelled water shed in YuKhorKhu village that is used after the water has filtered down from the TaungPaw water storage. The water used mainly for drinking by YuKhorKhu village comes out at KB1; the water that comes out at level 3 goes to TaungPaw water storage and after that it is distributed for LoKaLo villages' use by water pipes. Additionally, there are other water resources under individual ownership within the villages from which the local people can purchase water. Within the Mawchi mining project area, the main water resources are no further than 2,000 feet from the mining. This water is not only for the Mawchi mining projects but also the main source of water that the local people rely on for both drinking and other uses.

b. Use of water sources by businesses and local people

The quality of the water passing from the mine and from the aqueducts that the local people in the Mawchi Mining region primarily depend on is not tested. Moreover, there is no water testing conducted by the mining department or the business consortiums operating on the mine. In spite of this, some civil society organizations were able to test the main water sources around the Mawchi mine and within some natural water springs, the units of lead and arsenic found were above the limits set by the World Health Organization (WHO). Kayah Earthrights Action Network has tested ^{Ref:15} the quality of the natural water sources in the Mawchi mining area three times and the environmental laboratory provided findings of levels of lead and arsenic above the limits.

In the Mawchi mining projects, underground mining is practiced in hundreds of mineshafts which produce a lot of waste soil, rocks and polluted water. There is no systematic waste management so all of this waste soil, rocks and polluted water accrues in the local environment and rivers.

The main use of water in the Mawchi mining projects is for cleaning extracted minerals. As a result of this cleaning process, waste soil, rocks and polluted water are a by-product of the process. Thus because of the unsystematic practices concerning waste soil and polluted water

Ref:15 Kayah Earthrights Action Network's (Water testing result on the water on Maw-chi mining area)

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by the stakeholders working in the mining industry, local people's natural water sources are being damaged and thus, waste soil and polluted water are contaminating their environment. One particular case study of the rivers around Mawchi mountain shows that waste soil and polluted water produced by the unsystematic mining practiced in the mining projects has almost completely destroyed the lower part of Molo creek.

c. Dangers connected with projects

Mawchi mine has been in operation for about 100 years and often dangers occur relating to the projects that are conducted there. Although some are documented in case studies, it has not been possible to document all of them. There have been three prominent environmental events that have affected people and buildings. In 1975, underneath mark three, ten people died as a result of falling rocks. On the 15th July, 1985, a landslide that destroyed 21 homes killed 22 people. In October 2015, approximately 28 people lost their lives in a landslide and over 60 homes were destroyed. Moreover, there are regular smaller landslides and injuries and fatalities frequently occur as a result of the operations of the mining projects.



One of the environmental impacts (landslide) because of mining

4. Socio-economic impacts of the project

In March 2018, according to the records of the General Administrative Department, the maximum population of the 10 quarters/ village tracts within the Mawchi Mining project area of Bawlekhe division, Phasaung Township was 22,655 people within a total of 55 villages. Within the 10 village tracts in the Mawchi administrative region of Phasaung Township, the Mawchi Mining area has a population of 7,756 people. According to the 2014 census, the Mawchi region in Bawlekhe district has a general population of 42,909 people. There is a general population of 25,594 people in the townships of Bawlekhe district in Phasaung Township.



The area where mining workers live near to Mawchi mine

The main ethnic group of the local people residing in the villages of Mawchi region is the Karen ethnic group. There are also other national ethnic groups including Rakhine, Burman, Kayan, Kayaw and Kayah as well as non-national ethnic groups such as Chinese, Nepalese and Indian. The majorities Karen population of Mawchi region follow Baptist Christianity and their Baptist administration is governed by the hillside region administration

(KaSehKaLe KaWare) of the Taungoo Paku Baptist Association under the Karen Baptist Convention.

Although there are indigenous people, local people and migrant mining workers living in the Mawchi region, there is no religious or ethnic discrimination as each of these groups practice and follow their respective customs in their groups. Additionally, as well as the main religion of the region, Baptist Christianity, there are also believers of other Christian denominations and Buddhism within Mawchi. There are also minorities of Hindus and Muslims following their religion by descent. Until the present day, the local indigenous people continue to practice their local customs and traditions.

Kayah State's capital, Loikaw is located far from Mawchi and as a result of decades of civil war, the region is highly underdeveloped. Since 2012, changes have been made to improve the region's development by drawing up a development action plan for infrastructure and communications. As of now, Mawchi region has Mawchi district hospital and two high schools: LoKaLe basic education high school and Lower Village High School. As a result of limited government support, local people cannot access sufficient education and health services. Moreover, in Mawchi region, there is not enough support from the government or the mining businesses and there is limited knowledge of the health impacts to the local people caused by the mining projects.

The main activity to support livelihoods in Mawchi region is mining but besides that, local people also plant cardamom orchards and exchange goods. Some small groups of local people mine in the pits; though most search for rocks in the creek and some of them do drilling which is very dangerous for them.

The Mawchi mine is located in an area that although officially under the control of the government and its laws is also affected by the stakeholders from ethnic armed organizations and other governance mechanisms. Therefore, in relation to land ownership, the people of the region still practice customary land management systems and to use land requires a request from the inquirer and permission from the customary land owner. According to the 2012 Land laws, despite some of the local people registering their land, the majority are yet to register. Additionally, the land surrounding the Mawchi mine is recognized under the mining law as being connected to a region designated for mining and as such under the authority of the mining department; this causes dissatisfaction among the local people and limits the local people's access to information on where the mining area is located and the size of the area.

Mawchi region is defined as a black area by the government, yet since 2012, there has been a state-level ceasefire between the Karenni National Progressive Party and the government. In spite of this, there are occasional confrontations between the two groups that worry the local people. There are also migrant workers especially from the divisions/ states of Peku, Irrawaddy and Karen working in the area. Disputes and conflicts occasionally emerge between the local people and the migrant workers. Moreover, there is no trust between the two sides because some of the migrant workers, among other social abuses, take minerals

from the sacred places of the local people, which is prohibited. Although the migrant workers' backgrounds and their different practices do not match with those of the local people, they must respect and value the local people's culture, traditions, beliefs and social order. One local resident of Mawchi region said on this issue,

"I know people come to stay in Mawchi. Before 2012, I could stay without closing the door of my house and the clothes that we put out to dry never disappeared. But now, if the door is unlocked, a thief will enter. The clothes that are left out to dry disappear. The shoes disappear."

As a result of the migrants coming to work on projects, there are often social abuses both against local people and between migrant workers themselves. Rape is a social abuse that mostly affects local women and young women. In the past, there were no rape cases amongst the local people but because of the migrant workers arriving along with the projects, they are often arising. Some of the cases involve underage girls and these cases can affect the girls for their whole lives. Working on the Mawchi projects, there are not only migrant workers that have been called by the respective companies to work on their mining projects but also migrant workers that have come to work illegally; there is no one accountable or responsible for the social abuses of these migrant workers. Moreover, there are no records maintained of the migrant workers' entrance, their supervisors or persons responsible for them. Additionally, the victims are neglected with no remedies or protections provided to them. One person working with the local people as a representative of the women's rights organization, Women for Women Foundation – WWF said the following on these issues,

"Actually, the situation in the Mawchi Mining region is unsafe for women. Their main concerns are because of what will happen with the security situation and the geological situation. One of the causes of this situation has been migrant workers. The companies don't say how many migrant workers they call and they don't take responsibility for the abuses committed by their workers. Besides this, there are no full investigations by the ministry of immigration or other respective authorities so although these cases occur often, there is no responsibility or accountability for those affected."

There are frequent social abuses occurring with these projects and according to data from WWF, these social abuses are increasing, year on year. Therefore, for social problems emerging relating to migrant workers, there need to be controls and investigations conducted by the respective authorities or if they are associated with projects or called by companies by those respective entities. Although the main beneficiaries of the Mawchi mining projects are the business people and their partners, those suffering from human and environmental rights abuses are mostly the local people of the Mawchi region especially the women, children and the mining workers. Women are mainly involved in filtering tin, collecting stones and rinsing tin; Men are mostly involved in the highest income activities such as mining by air-gun and dynamite mining which are dangerous. Therefore, most of the local people that work on the tin and tungsten mining projects are mainly suffering from long-term lung diseases and some of them die young as a result.

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Moreover, relating to the above situation, there are not sufficient medical services or regular health check-ups on the mining activities effects by organizations, mining companies or government. According to the local people, although they are suffering many problems as a result of the mining projects, they have no supporting evidence so they have lost their rights. One nurse of Mawchi region who has been involved in medical care in Mawchi region for decades spoke out on the issue.

“There are many health problems related with Mawchi mine. Among the tin workers, there are chest infections, asthma, flu, TB, and in particular there are more diseases related with the lungs. There was before. There still is now. We cannot treat the diseases associated with the mine as there is not enough medicine and there are not sufficient tools and equipment. Most of the people take medicine, orally or by injection and recover for a brief period. Then, they come back again. We cannot provide the specific treatments that they need.”

Looking at the mining projects, generally as a result of them, you can assume that the local people receive some opportunities and benefits, but on careful observation, this is far outweighed by the benefits to the business people and the administrators. Presently, although there are more economic rights for the local people to work freely on mining, there are many restrictions upon them. According to the local workers, they have the right to mine and sell at the company's market price providing they return a proportion of the metal extracted from their mine shafts to the mining companies. Sometimes those who sell on the black market above the companies' price are captured and their materials are confiscated from them.

5. Environmental impacts of the project

Within the Mawchi mining area and the surrounding villages, according to the local people residing in the Mawchi region, they lack access to information concerning implementation of mining projects, face restrictions on attending and participating in meetings concerned with those projects and are not informed of potential environmental impacts of the projects in their region. Moreover, information about the environmental impacts of projects needs to be provided for public awareness and access to general environmental knowledge remains limited. Concerning the limited information available on mining projects, one local resident of Mawchi region said,

“Now for KMPC to handle the extension of their mining project, they are doing an EIA. They don’t say anything to the people living in this region. They have no documents to show and we don’t know anything. We have come to know as a result of attending training on the steps of the EIA process that their path is not following the EIA process. Why we say that it does not meet it is that our local people don’t know, and when we learn about the law, we realize that our local people have rights to be involved in the project process and there is no transparency in the EIA process that the companies are currently implementing; our indigenous people’s rights are being breached.”

The Mawchi mining project has caused much loss to the environment not only within the region but also outside of the region because of unsystematic mining practices, a single-minded pursuit of profit by the groups and stakeholders involved in mining, weak laws and rules relating to controls on mining and the mining stakeholders’ destructive practices, corruption and exceeding their rights. There needs to be many types of posts used for the Mawchi mining projects, the trees for them are currently felled in Mese region as there are no longer sufficient trees from where they were previously felled in Mawchi region. Every year, there is a consequence to the forest as they need at least 1,000 tonnes of timber. The timber used for the mining systems implemented at Mawchi once lasted for decades as the timber was reinforced, this method is not used for the current implementation and documents show that the timber is no longer used over a long period of time and has to be changed often. Because of the consequences of the loss of timber, there has not only been more deforestation but also further impacts to the ecosystem. In addition, increased use of the open pit system is causing not only further environmental damage but also increased losses to the local people’s water resources, forests and perennial plantations.

In 2013, the Kayah State mining company conducted an Environmental Impact Assessment (EIA) and although they applied to the ministry of mining, the local people were not informed about the process and also, they were unable to receive the right to access information on the application’s status or rejection. When conducting an EIA according to the EIA procedures as defined in the law, the project applicants must provide information to the local leaders, administrators and the CSOs and CBOs on the project information, any environmental and social studies, their activities and project impacts but in reality, these people do not know how this is conducted and how the ministry has made confirmations on

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these projects. Moreover, although the project applicant documents show it has prepared to implement projects with corporate social responsibility (CSR) according to the EIA procedure, there is still weak implementation of the United Nations Global Compact Principles (UNGC). Within the UNGC guiding principles, businesses must fully respect the human rights of the local people, they must recognize and respect the rights of the workers, without using techniques that degrade the environment or practice corruption. Relating to these principles, the implementation and characteristics of the mining companies operating within Kayah (Karenni) State are very weak at adhering to them.

“ The projects at points 2,3,4 and 5 under the village of YuKorKho (13 Khon) are all underneath homes. Later, we don't know if we will be able to stay in YuKorKho (13 Khon). Look at the road in, there are landslides and rocks everywhere. In rainy season, it is worse. It is very dangerous to travel around”^{Reg: 16}A villager from YuKhorKho (13 Khon)

Ref:16 Molo Women Mining Watch Network's report



A landslide in Mawchi mine because of a mining project

“Mawchi is being totally destroyed. I was born here. I am now an adult of 40 - 45 years. It is being destroyed; if I am to say, I would say that 90% of the environment has been destroyed. We can’t bear to be a victim of history. What will I be able to pass down to my grandchildren? They will take everything from us is what my father told us. We can’t bear it” A Mawchi resident

6. Human rights situation and abuses by businesses involved in mining

There are human rights abuses occurring at every step of the mining process as a result of the mining projects implemented by the groups and individuals in Kayah (Karenni) State's mining businesses. There are human rights abuses emerging related to the social responsibilities of mining operators, trading of minerals, rights to access to information concerning mining projects and on workers. Mawchi tin and tungsten mine's businesses are employing workers in their businesses without complying with the Worker's Law which has been in place since 2010. Although under the 2008 Constitution, all law needs to be administered with protections for the workers of the union, in the most part enforcement of the legal protections is weak. Moreover, for the effects and fatalities as a result of mining projects, the workers are satisfied only by compassion without appropriate remedies or compensation. In addition, there are no other supports through social services or health safeguards for other effects concerned with mining projects. Furthermore, many of the workers in dangerous situations are of a young age especially the men (youth or middle-aged) and face risks of long-term diseases as consequences such as tin poisoning, lung disease and tuberculosis. Most of the workers die from these diseases without being provided any treatment or remedies. On this situation, one Mawchi resident who has been living in Mawchi region for over 30 years said,

“The men working in the tin mining projects don't live long especially those working on the air-gun projects. For most of them, as a result of injuries and diseases, they can only keep working for 6 months or one year and then for most of them their lifespan is reduced. Although this work is dangerous, they do it because they will be able to get more money. Most of them are young and some of them come from other regions. On arrival they are very strong, but they are not able to do this for the long-term and the money they get is not even enough for their treatment yet the companies do not take responsibility for them; the ones suffering are the micro-miners and the local people. However, all of the benefits just go to them [the companies]”

For the workers involved in mining businesses, they are without any rights to life insurance and they must solve any social or economic consequences that emerge. On the businesses that are implementing mining projects, they are acting without taking responsibility for the physical and mental effects that are connected with their projects by not providing services for secure clean water, health safeguards or damage to rivers and natural resources. As for the local people, the local people working in the mining sector and the workers are suffering from many physical and mental effects, it can be said that their rights have been abused. Aside from that, by the companies system, the local people that are working in any way are forced to support the companies and sell the minerals that they have back to the company at below the market rate even when the tin market price is falling, and if the local people keep the resources for a long time and sell them outside, they can be caught and the tin can be confiscated.

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According to the local people, their fears have worsened up to the present day as the over sixty years of civil war has become unbearable. Though they have suffered from many human rights abuses, they do not have any access to justice. Moreover, the stakeholders involved in the mining sectors that hold the mining rights are comprised of militaries, companies with military backgrounds and other cronies. Those that are helping local people for their mining rights are facing oppression, various kinds of threats and many restrictions on their work.

The ministry of mining and environmental conservation is very weak at ensuring protections and supervision for environmental and human rights abuses by the mining projects in Kayah (Karenni) State, implemented under the ministry of mining enterprises (No 2). Under the new government formed by the National League for Democracy, NLD, although there have been many meetings conducted on human rights abuses, there is yet to be any significant positive changes. Moreover, there have not been any prohibitions or pressure on the mining companies whose activities have facilitated those human rights and environmental abuses. Furthermore, there is no awareness among the people over what kind of permission foreigners (Chinese) arriving to work in the mining businesses have received. There needs to be investigations to clarify whether they are arriving with permission from the state ministry of environmental conservation and mining or whether they are arriving with permission from the union level. The Kayah State immigration has been delayed in working on matters that involve the mining sector and the large numbers of foreigners arriving there.



No.2 Burmese military gate which is situated on the only road into Mawchi mining area.



Mining workers in Mawchi area

7. Current political, human rights and environmental situation

The issue in the mining sector is that the projects include the main businesses in Karenni State which involve and provide economic opportunities to not only business people but also the military and the ethnic armed organizations. For the ethnic armed organizations in Kayah (Karenni) State, since signing ceasefires with the government, despite not having a defined project role, after signing ceasefires their interests as stakeholders have increased. Therefore, it is clear that the stakeholders in these projects include those groups that sign ceasefires with the government and they receive mining rights amongst other rights.

The government has begun to draw and implement a plan for accelerating national development by calling for national and international investment for the whole nation's development. On one hand this is a positive objective; though, on the other hand, the implementation of these projects by stakeholders is affecting the environment and human rights of the local people residing in the respective development areas. The local people feel that the projects are implemented without safeguards to protect from negative impacts because there are no mechanisms to ensure checks and balances against the environmental situation. From 2010, more businesses have invested in natural resources in Kayah (Karenni) State and more and more are intending to approach the sectors of mining, large-scale land use projects, large factory construction and tourism. However, in the stakeholders' implementation processes of these investment projects, the consent of the local people is being neglected and human rights and environmental abuses are occurring.

Currently although the Karenni National Progressive Party (KNPP), have signed a state-level bilateral ceasefire agreement with the Myanmar Union level government, they are yet to sign the Nationwide Ceasefire Accord (NCA). According to the bilateral ceasefire agreement, during the ceasefire period, they may not carry out large-scale projects, However, since signing the ceasefire agreement, increasing numbers of business consortiums have approached Kayah (Karenni) State with investments. As a result of these investments which focus on economic benefits without transparency, accountability or responsibility, the groups involved and mechanisms used are causing more human rights and environmental abuses related with transparency, accountability and responsibility. The indigenous people and local people who have faced human rights and environmental abuses for decades are currently experiencing new human rights and environmental abuses caused by centralized bureaucracy and businesses working for their own benefits. On one side, the national peace process is being implemented but on the other, mechanisms need to be set up that strengthen controls and limitations on businesses' project implementation to reduce or eliminate human rights and environmental abuses through investigations into proposed projects and into current projects as these human rights and environmental abuses are damaging national reconciliation.

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၂၀၁၂-၂၀၁၃ ဘဏ္ဍာရေးနှစ် အမှတ် (၂) သတ္တုတွင်းလုပ်ငန်း၏ သတ္တုများ ပြည်ပတင်ပို့မှု နှစ်ချုပ်စာရင်း

စဉ်	သတ္တုအမျိုးအစား	တန်ချိန် (MTS)	တန်ဖိုး(သန်းပေါင်)		
			US\$	Euro	ကျပ်
၁	ခဲမဖြူသတ္တုသန့်စင်	570.5315	3.502	-	2953.145
၂	ခဲမဖြူအဖြူကန်ကန်ရောရာသတ္တု	461.9737	3.954	-	3358.861
၃	မော်ဆိုရောရာသတ္တု	918.0645	4.312	4.206	8398.775
၄	အဖြူကန်ကန်သန့်စင်	16.4247	0.207	-	176.321
၅	ခဲမဖြူသတ္တုသန့်စင်(အဆင့်နိမ့်)	12.5896	0.099	-	85.360
၆	ရိုးလိက်သတ္တု	2.2490	0.019	-	15.771
၇	အဖြူကန်ကန်(အဆင့်နိမ့်)	0.8700	0.007	-	5.546
	စုစုပေါင်း	1982.7030	12.100	4.206	14993.779

The financial data relating to Mawchi Mining Project, Kayah State

(Source - Ministry of Mining website)

8. Research Strengths and Weaknesses

In compiling this research, KEAN has been able to document the concerns of local people and village leaders on human rights and environmental abuses in Kayah (Karenni) State since 2014 with their active participation in interviews. One limitation of this research is that it could not document interviews with the businesses working in the mining sector. Moreover, some names and information has been left out of this report based on security concerns.

Despite this, through this report, you will be able to know about the human rights and environmental abuses related with local people, indigenous people, and those involved in the mining sector; as well as this, you will know about the situation of human rights and environmental violations occurring because of mining projects in Kayah (Karenni) State. Moreover, the aim of this report is for the mining sector in Kayah (Karenni) State to prioritize the socio-economics of the indigenous people and for mining projects to become transparent, accountable and responsible.

9. Research Methodology

To produce this report, beginning in early 2014, Kayah Earthrights Action Network researched human rights and environmental abuses related with mining projects in Kayah (Karenni) State. In collecting this research on local people and indigenous people in the regions where mining projects are being implemented in Kayah (Karenni) State, we have interviewed local people about human rights and environmental abuses, collected photo and video documentation, held focus group discussions, collected data and met with civil society and individuals working on the effects of the mining sector on local people's human rights. To compile this report, Kayah Earthrights Action Network used the data collection methodologies outlined below.

a. Surveys and Formats

In compiling this report, Kayah Earthrights Action Network collaborated with local representatives to collect data on a survey focused on nine main points. The survey format documented information on the stakeholders in the mining business and the local people in mining areas including their family information, background and history, agriculture and land, access to water, health and socio-economic situation.

b. Trainings and Focus Group Discussions

Kayah Earthrights Action Network provided trainings and held focus group discussions with local people on indigenous people's rights with a focus on mining rights, declarations and laws on mining and corporate social responsibility, as well as, research methodologies, environmental conservation, indigenous people's customary land and natural resource management systems and national land laws.

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c. *Photo and Video Documentation*

The work collected both ordinary documentation and video documentation on human rights and environmental abuses caused by mining projects. This documented an overview of the general damages caused to the environment by projects such as environmental changes, destruction of rivers, damage to agricultural land and summaries of water testing.

d. *Interviews*

Interviews were conducted with many local people according to the different groups of villages on the negative environmental impacts and human rights abuses caused by mining projects. In those interviews, youth and women representatives, activists on mining rights, mine shaft owners and local people from areas located close to mines were interviewed and their experiences of environmental and human rights abuses and opinions of the challenges they faced were documented.

e. *Storytelling*

Storytelling was conducted to listen to information about impacts of mining and its effects upon the natural environment, the emerging challenges and the impact on hygiene and sustainability.

f. *Case Studies*

Detailed documentation was collated to form accurate case studies on human rights and environmental abuses related to mining projects in Kayah (Karenni) State. The documentation was about mining stakeholders and the lack of transparency; accountability; and responsibility, and the human rights and environmental abuses in the mining sector.

g. *Data Analysis*

Kayah Earthrights Action Network reviewed and analyzed all the data relating to human rights and environmental abuses caused by mining to ensure that all of the information was accurate with civil society organizations working on regional mining issues, local people and organizations. This analysis ensured that the information was stronger and that the data could be verified step by step.

h. *Use of information from government departments, experts and other organizations*

For this report, information on mining projects in Kayah (Karenni) State was collected from other secondary sources such as other social organizations' reports, documents from the department of mining and other government departments, reports on quantitative information, books and publications by some experts; and news from both Myanmar and international sources on the Kayah state mining sector; other news sources and websites.

10. Recommendations

Kayah Earthrights Action Network held the 'Earthrights Forum' from the 5th – 6th June 2017. The forum participants who included representatives from every township of the region; ethnic political parties and 109 representatives from civil society organizations discussed the land, mining, natural resource and mega-development sectors in Kayah (Karenni) State and produced a statement relating to the four sectors and their rights. This report reaffirms the recommendations made concerning the four sectors and details the recommendations for the mining sector below:

Mining Recommendations

1. All current mining projects should be reviewed according to international standards of EIAs (Environmental Impact Assessments), SIAs (Social Impact Assessments) and the principle of FPIC (Free, prior and informed consent) and only mining projects that meet these standards should get permits.
2. During project implementation, it must be compulsory for companies, government and stakeholders to provide support, compensation and remedies for damage to local people's farmland, paddyland, orchards, land-plots, natural environment and buildings caused by their mining projects.
3. The local people must have the right to freely participate in the management of mining projects and the state government must have the power to freely manage the equitable distribution of the benefits within the state amongst each of the townships and villages.
4. A new legally recognized watchdog organization should be formed at the state level consisting of civil society organizations, legal experts and other persons of expertise to provide oversight of the mining sector in Karenni State.
5. There should be no new rights granted for mining projects in the region without the guarantee of political transformation (to a future federal system).

11. Conclusion

The mining sector in Kayah (Karenni) State is not only the state's main source of income; it is an important source of income for the whole nation. Mawchi Mine has been in operation for over 100 years and until today remains an important mining project. This report explains about the human rights and environmental abuses mainly against the local people by businesses in the state's mining sector that are facilitated by stakeholders overstepping their authority; weak mechanisms, policies, procedures and ineffective laws governing business; and no transparency, accountability or responsibility for environmental and human rights breaches; and unsystematic mining methods.

Therefore, for the mining projects being implemented in the Kayah (Karenni) State region, there must be action taken to implement and maintain necessary laws and procedures that ensure projects practice sustainable mining, benefit local people and that business are accountable and responsible for human rights and environmental abuses caused by their activities that impact local people and indigenous people. Moreover, this report shows the need to reform and improve the development of the Kayah (Karenni) State mining sector and to take action on the effects of human rights and environmental abuses by the stakeholders.

12. Appendices

(a) Reference sources for the report

- Ref:1 H.L CHHIBBER, The mineral resources of Burma Page.186
- Ref:2 Burma's rising star, <https://www.geolsoc.org.uk/Geoscientist/Archive/February-2015/Burmas-rising-star>
- Ref:3 Resource Emermaul Company Limited (<http://www.proactiveinvestors.com.au/companies/news/135756/eumeralla-resources-seeks-to-explore-for-tin-and-tungsten-in-myanmar-45035.html>)
- Ref:4 *Kayah state investment opportunities report (2018)*
- Ref:5 <https://www.worldatlas.com/articles/leading-tin-producing-countries-in-the-world.html>
- Ref:6 United States Geological Survey (USGS) Minerals Resources Program (<https://www.indexmundi.com/minerals/?product=tungsten>)
- Ref:7 <https://www.statista.com/statistics/264958/antimony-production/>
- Ref:8 http://www.mining.gov.mm/ME-2_mm/1.ME-2_mm/1.ME-2_mm_Menu_1240/Tender%20Success.jpg
- Ref:9 <http://www.internationaltin.org/china-ore-imports-fall-sharply-in-february/>
- Ref:10 <https://web.facebook.com/elevenbroadcasting/videos/1726902624232881/>
- Ref:11 Myanmar: The Politics of Economic Reform"(PDF). Asia Report N° 234. International Crisis Group.27 July 2012
- Ref:12 Building the Tatmadaw : <https://www.researchgate.net/publication/272092747> Ref:13 <http://www.portergeo.com.au/database/mineinfo.asp?mineid=mn406>)
- Ref:14 ကရင်ပြည်နယ်တွင် ရေသမိုင်း - ဖူးစေကာလယုတော (စာ-၂၃၁)
- Ref 15 Kayah Earthrights Action Network (Laboratory tests on natural water in the Mawchi mining area))
- Ref:16 Report by Molo Women Mining Watch Network

(b) Appendix maps, photos and records

1. Photo documentation
2. Sample questionnaire format
3. Earth Rights Forum Statement
4. Records on documenting the natural resources of Mawchi region.
 - (a) 2014 Results of water testing
 - (b) 2015 Results of water testing
 - (c) 2016 Results of water testing
 - (d) 2017 Results of water testing

1. Photo documentation

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Samples of water from the Mawchi region to be sent for testing



Past samples of purified tin

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Earthrights Forum



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The local people examine the Mining Site



Discussion on mechanisms related to economic responsibility and accountability, and indigenous people's rights

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LoKaLo refinery plant (1)



LoKaLo refinery Plant (2)

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2. Sample questionnaire format

ဒေသခံများအပေါ် သတ္တုဆိုင်ရာလူမှုစီးပွားနှင့်သဘာဝပတ်ဝန်းကျင်အချက်အလက်များ

(၁) အခြေခံအချက်အလက်များ

အမှတ်စဉ် ()

မေးမြန်းသူအမည်		မေးမြန်းသည့်ရက်စွဲ	(ခုနှစ်)	(လ)	(ရက်)
မြေဆိုသူအမည်		အသက်	လိင်		
			အမျိုးသမီး ()		
နေရပ်လိပ်စာ	ကျေးရွာ	အုပ်စု	မြို့နယ်	ပြည်နယ်	

(၂) မိသားစုဆိုင်ရာ အချက်အလက်များ

(၂.၁) မိသားစုအရေအတွက် စုစုပေါင်း

(၂.၂) စဉ်	(၂.၃) အမည်	(၂.၄) လိင်	(၂.၅) အသက်	(၂.၆) အိမ်နှင့်ပတ် သက်မှု	(၂.၇) အလုပ်အကိုင်	(၂.၈) ပညာအရည်အချင်း
		(က) အမျိုးသား (ခ) အမျိုးသမီး		(က) အိမ်ထောင်ဦးစီး (ခ) အိမ်ရှင်မ (ဂ) သား (ဃ) သမီး (င) မြေး (စ) အဖိုး (ဆ) အဘွား (ဇ) အခြား (ည) မသိပါ	(က) လယ်သမား (ခ) မိကျွေးကုန်လုပ်သား (ဂ) အစိုးရဝန်ထမ်း (ဃ) ဘာသာရေးဝန်ထမ်း (င) ဗိုလ် (စ) လက်သမား (ဆ) ကျွဲမွေးအလုပ်သမား (ဇ) မိကျွေးပိုင်ရှင် (ည) အခြား	(က) မူလတန်း (ခ) အလယ်တန်း (ဂ) အထက်တန်း (ဃ) တက္ကသိုလ် (င) အတန်းမရှိ (စ) အခြား
၁။						
၂။						
၃။						

သတ္တုဆိုင်ရာလူမှုစီးပွားနှင့်သဘာဝပတ်ဝန်းကျင်ဆိုင်ရာ စစ်တမ်းကောက်ယူမှုပုံစံ (kean/mining/data form -1)

၄။						
၅။						
၆။						
၇။						

(၂) နောက်ခံသမိုင်းဆိုင်ရာအချက်အလက်များ

(၂.၁) ဒီဒေသတွင် နေထိုင်လာသည်မှာ ဘယ်လောက်ကြာပြီလဲ။	(၁.၁၆) ဒီဒေသတွင် မနေထိုင်ခင် အခြားဒေသတစ်ခုခုတွင် နေထိုင်ဖူးပါသလား။ (က) နေထိုင်ဖူးသည်။ နေထိုင်ဖူးလျှင် ဘယ်နေရာလဲ (ခ) မနေထိုင်ဖူးပါ။	(၂.၂) ဘာကြောင့်ဒီနေရာမှာ ပြောင်းရွှေ့ နေထိုင်ရတာလဲ။	(၂.၃) ဒီနေရာမှာအခြေချဖို့ အခက်အခဲတွေရှိခဲ့ပါသလား။ ရှိသည် ()အခက်အခဲတွေက ဘာတွေလဲ။ မရှိပါ ()
(က) ၁ နှစ်အောက် () (ခ) ၁ နှစ်မှ ၅ နှစ်အတွင်း () (ဂ) ၅ နှစ်မှ ၁၀ နှစ်အတွင်း () (ဃ) ၁၀ နှစ်မှ ၂၀ နှစ်အတွင်း () (င) ၂၀ နှစ် မှ ၃၀ နှစ်အတွင်း () (စ) ၃၀ နှစ် ၄၀ နှစ်အတွင်း () (ဆ) ၄၀ နှစ်အထက် () (ဇ) အခြား		(က) သဘာဝဘေးကြောင့် (ခ) စီမံကိန်းများကြောင့် (ဂ) အလုပ်အကိုင်အခွင့်အလမ်း (ဃ) စစ်ဘေးကြောင့် (င) ကလေးပညာရေးအခွင့်အလမ်း (စ) အခြား	

(၃) စိုက်ပျိုးရေးနှင့်မြေယာဆိုင်ရာအချက်အလက်များ

(၃.၁) သင့်မိသားစုမှာ စိုက်ပျိုးလုပ်ကိုင်နိုင်သောမြေယာပိုင်ဆိုင်မှုများရှိပါသလား။

(က) ရှိသည်။ ()

(ခ) မရှိပါ။ () မရှိလျှင်နံပါတ် (၄) ကိုသွားပါ။

(၃.၂) စိုက်ပျိုးလုပ်ကိုင်နိုင်သော	(၃.၃) ပိုင်ဆိုင်မှု အနေအထား	(၃.၄) အသုံးချမှု အနေအထား	(၃.၅) နှစ်စဉ်ပျမ်းမျှ	(၃.၆) စီမံကိန်းအတွက်
(က) တစ်ဧကအောက်	(က) ပုံစံ (၇) ရရှိပြီး	(က) ရာသီသီးနှံ	(က) တစ်သိန်းအောက်	(က) ရှိသည်

သတ္တုဆိုင်ရာလူမှုစီးပွားနှင့်သဘာဝပတ်ဝန်းကျင်ဆိုင်ရာ စစ်တမ်းကောက်ယူမှုပုံစံ (kean/mining/data form -1)

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(ခ) တစ်ဧကမှ ၅ ဧကအတွင်း	(ခ) ပုံစံ (၇) လျှောက်ထားဆဲ	(ခ) နှစ်ရှည်ပင်	(ခ) ၁ မှ ၅ သိန်း	(ခ) မရှိပါ
(ဂ) ၅ ဧကမှ ၁၀ ဧကအတွင်း	(ဂ) ခေလအရ	(ဂ) အဌာနချထား	(ဂ) ၅ မှ ၁၀ သိန်း	(ဂ) အခြား
(ဃ) ၁၀ ဧကမှ ၁၅ ဧကအတွင်း	(ဃ) နားလည်မှုအရ	(ဃ) သတ္တုထုတ်လုပ်	(ဃ) ၁၀ မှ ၂၀ သိန်း	(ဃ) မသိပါ
(င) ၁၅ ဧကမှ ၂၀ ဧကအတွင်း	(င) အခြား	(င) လုပ်ထားခြင်း	(င) ၂၀ မှ ၃၀ သိန်း	
(စ) ၂၀ ဧကမှ ၃၀ ဧကအတွင်း	(စ) မသိပါ	(စ) အခြား	(စ) ၃၀ မှ ၅၀ သိန်း	
(ဆ) ၃၀ ဧကအထက်		(ဆ) မသိပါ	(ဆ) သိန်း ၅၀ အထက်	

(၄) ရေရရှိခြင်းဆိုင်ရာအချက်အလက်များ

(၄.၁) ရေရရှိမှုနှင့်ပတ်သက်သောအခက်အခဲများရှိပါသလား။

(က) ရှိပါသည် () (ခ) မရှိပါ () မရှိလျှင် (၄.၃) ကိုသွားရန်။

(၄.၂) ရေရရှိမှုနှင့်ပတ်သက်သောအခက်အခဲများက ဘာတွေလဲ။

- (က) မသန့်ရှင်းခြင်း
- (ခ) ဝယ်သုံးနေရခြင်း
- (ဂ) ဈေးကြီးခြင်း
- (ဃ) ရေပြတ်လပ်မှုရှိခြင်း
- (င) ရေရရှိရန်ခက်ခဲခြင်း
- (စ) တိမ်ကောလာခြင်း
- (ဆ) အခြား

(၄.၃) ဒေသမှထွက်သောရေကို သောက်သုံးရေအတွက်အသုံးပြုပါသလား။

(က) အသုံးပြုပါသည် () (ခ) အသုံးမပြုပါ () အသုံးမပြုလျှင်ဘယ်ကအသုံးပြုနေလဲ

(၄.၄) သောက်သုံးရေနှင့်ပတ်သက်ပြီးအခက်အခဲရှိပါသလား။

(က) ရှိပါသည် () (ခ) မရှိပါ () မရှိလျှင် နံပါတ် (၄.၆) ကိုသွားရန်။

(၄.၅) သောက်သုံးရေနှင့်ပတ်သက်သောအခက်အခဲများက ဘာတွေလဲ။

(က) မသန့်ရှင်းခြင်း

သတ္တုဆိုင်ရာလူမှုစီးပွားနှင့်သဘာဝပတ်ဝန်းကျင်ဆိုင်ရာ စစ်တမ်းကောက်ယူမှုပုံစံ (kean/mining/data form -1)

- (ခ) ဝယ်သုံးနေရခြင်း
- (ဂ) ဈေးကြီးခြင်း
- (ဃ) ရေပြတ်လပ်မှုရှိခြင်း
- (င) ရေရရှိရန်ခက်ခဲခြင်း
- (စ) တိမ်ကောလာခြင်း

(ဆ) အခြား

(၄.၇) သင့်မိသားစုအတွက် အသုံးပြုနေသောရေရရှိနိုင်မှုအရင်းအမြစ်နေရာများ

- (က) ရေထွက်ပေါက်
- (ခ) ရေချောင်းများ
- (ဂ) မိုးလျှော်ကန်
- (ဃ) ရေကန်
- (င) ရေသန့်ကုမ္ပဏီ
- (စ) အခြား

(၄.၈) သင့်မိသားစုရေယူရာအရင်းအမြစ်များတွင် မည်သည့်စီမံကိန်းများရှိပါသလဲ။

- (က) သတ္တုလုပ်ငန်း
- (ခ) သစ်ထုတ်လုပ်သည့်လုပ်ငန်း
- (ဂ) စာတုစိုက်ပျိုးရေးလုပ်ငန်း

- (ဃ) မွေးမြူရေးလုပ်ငန်းများ
- (င) စက်ရုံအလုပ်ရုံ

သတ္တုဆိုင်ရာလူမှုစီးပွားနှင့်သဘာဝပတ်ဝန်းကျင်ဆိုင်ရာ စစ်တမ်းကောက်ယူမှုပုံစံ (kean/mining/data form -1)

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(စ) အခြား

(၅) ကျန်းမာရေးဆိုင်ရာ အချက်အလက်များ

(၅.၁) သင့်မိသားစုအတွင်းတွင် နာတာရှည်ရောဂါခံစားရသူရှိပါသလား။

(က) ရှိပါသည်။ () ဘာတွေလဲ (ခ) မရှိပါ။ ()

(၅.၂) သင့်မိသားစုအတွင်း လွန်ခဲ့သော (၁၂) လအတွင်း ဆေးကုသမှုခံယူရတာတွေ ရှိပါသလား။

(က) ရှိပါသည်။ () ဘာတွေလဲ (ခ) မရှိပါ။ ()

(၅.၃) သင့်မိသားစုအတွင်း လွန်ခဲ့သော (၁၂) လအတွင်း အလွယ်တကူကူးစက်တတ်သောရောဂါခံစားရသူ ရှိခဲ့ပါသလား။

(က) ရှိပါသည်။ () ဘာတွေလဲ (ခ) မရှိပါ။ ()

(၅.၅) ရောဂါများခံစားရသည့်အခါ ဆေးကုသရန်အတွက် ဘယ်ကုသမှုလေ့ရှိလဲ

(က) ဆေးရုံ

(ခ) ဆေးခန်း

(ဂ) ဆေးဆိုင်

(ဃ) ရိုးရာအရကုသသောဆရာ

(င) ကိုယ့်ဟာကိုယ်

(စ) ဘယ်မသွားပါ

(ဆ) အခြား

(၅.၆) သင့်ဒေသအတွင်းမှာရှိတဲ့ ဆေးကုသမှုအရင်းအမြစ်နှင့်ပတ်သက်ပြီး ကျေနပ်မှုရှိပါသလား။ ဘယ်လိုအခက်အခဲတွေရှိပါသလဲ။

(၆) PERCEPTIONS AND EXPECTATIONS

(၆.၁) သင်အမြင်မှာ သင့်ဒေသအတွင်းအဓိကရင်ဆိုင်နေရတဲ့ပြဿနာ(၄) မျိုးက ဘာတွေဖြစ်မလဲ။

(က)

သတ္တုဆိုင်ရာလူမှုစီးပွားနှင့်သဘာဝပတ်ဝန်းကျင်ဆိုင်ရာ စစ်တမ်းကောက်ယူမှုပုံစံ (kean/mining/data form -1)

(ခ)

(ဂ)

(ဃ)

(၆.၂) လွန်ခဲ့သော (၅) နှစ်နှင့်နှိုင်းယှဉ်လျှင် သင့်ရဲ့ဝင်ငွေ၊ နေထိုင်မှုအဆင့်အတန်းက ဘယ်လိုရှိနေလဲ။

(က) ပိုကောင်းလာသည် () (ခ) ပိုဆိုးလာသည် () (ဂ) တူညီနေသည် ()

(၆.၃) အကြောင်းပြချက်က ဘာတွေဖြစ်မလဲ။

(၇) Social Integration and Cohesion

(၇.၁) ဒီဒေသအတွင်း အလုပ်လုပ်သူများနှင့်ကောင်းသောရင်းနှီးမှုများရှိတယ်လို့ သင်ထင်မြင်ပါသလား။

(က) ရှိတယ်

(ခ) မရှိပါ

(ဂ) အခြေအနေအပေါ်တွင် မူတည်သည်။ (ကျေးဇူးပြုပြီး ရှင်းပြပေးရန်။)

.....

(၇.၂) အကယ်လို့မရှိပါဟုဖြေဆိုထားပါက ရှင်းလင်းပေးပါရန်။

(၇.၃) သင့်မိသားစုအနေနဲ့ အခြားအိမ်ထောင်စုတစ်ခုနှင့်ပြဿနာဖြစ်ပွားခဲ့တာတွေရှိလား။

(က) ရှိပါသည် ()

(ခ) မရှိပါ။ ()

သတ္တုဆိုင်ရာလူမှုစီးပွားနှင့်သဘာဝပတ်ဝန်းကျင်ဆိုင်ရာ စစ်တမ်းကောက်ယူမှုပုံစံ (kean/mining/data form -1)

The Silent Ongoing Earthrights Abuses

(၇.၄) အကယ်လို့ ရှိပါသည်ဟုဖြေဆိုထားပါက ရှင်းလင်းပေးပါရန်။

(စ) သဘာဝပတ်ဝန်းကျင်ဆိုင်ရာအချက်အလက်များ

(စ.၁) လွန်ခဲ့သော (၅) နှစ်အတွင်း သင့်အတွင်း သဘာဝပတ်ဝန်းကျင်ပျက်စီးမှုတွေဖြစ်ပေါ်လာပါသလား။

(က) ဖြစ်ပေါ်ပါသည် () (ခ) မဖြစ်ပေါ်ပါ () မဖြစ်ပေါ်ရင် () ကိုသွားရန်။

(စ.၂) မည်သို့သော သဘာဝပတ်ဝန်းကျင်ပျက်စီးမှုများရှိပါသလဲ။

(က) ကမ်းပါး၊ ရေချောင်းနှင့်မြေပြင်တောင်မြင့်ခြင်း

(ခ) ရေကြီးခြင်း

(ဂ) သစ်တောပြုန်းခြင်း

(ဃ) ပိုးခါင်ခြင်း

(င) ရာသီဥတုမမှန်ခြင်း

(စ) ရာသီသီးနှံအပေါ် ပိုးကျခြင်း

(ဆ) ရေထုညစ်ညမ်းခြင်း

(ဇ) မရှိပါ။

(ဈ) မသိပါ။

(ည) အခြား

(စ.၃) ဘာကြောင့် သဘာဝပတ်ဝန်းကျင်ပျက်စီးမှုများ ဖြစ်ပေါ်နေရတာလဲ။

(က) သစ်တောခုတ်ထွင်မှုများလာခြင်း

(ခ) စည်းကမ်းမဲ့ အမှိုက်စွန့်ပစ်မှုများ

(ဂ) သတ္တုလုပ်ငန်းချဲ့ထွင်လာမှုများ

(ဃ) စာတုပစ္စည်းအသုံးများလာခြင်း

(င) မသိပါ။

သတ္တုဆိုင်ရာလူမှုစီးပွားနှင့်သဘာဝပတ်ဝန်းကျင်ဆိုင်ရာ စစ်တမ်းကောက်ယူမှုပုံစံ (kean/mining/data form -1)

(စ) အခြား

(ဆ) လုပ်ငန်းသုံးအနေအထားများ၊စနစ်ကျမှုအားနည်းခြင်း

(စ.၄) သဘာဝပတ်ဝန်းကျင်ပျက်စီးမှုများကြောင့် သင့်မိသားစုအပေါ် မည်သို့သောအကျိုးသက်ရောက်မှုများရှိခဲ့ပါသနည်း။

(က) ဘေးကင်းရာသို့ပြောင်းရွှေ့ရခြင်း

(ခ) လူနေအိမ်ပျက်စီးခြင်း

(ဂ) လယ်ယာမြေများပျက်စီးခြင်း

(ဃ) မိသားစုဝင်များသေဆုံးခြင်း

(င) မရှိပါ။

(စ) အခြား

(စ.၅) အစိုးရအဆင့်ဆင့်မှ မည်သည့်အကူအညီများပေးခဲ့သနည်း။

(၉) အကြံပြုချက်များ

(၉.၁) သင့်အသန့်ပတ်သက်သော စီးပွားရေး (သတ္တု)လုပ်ငန်းများအပေါ် မည်သို့သောအကြံပြုချက်များပေးလိုသနည်း။

သတ္တုဆိုင်ရာလူမှုစီးပွားနှင့်သဘာဝပတ်ဝန်းကျင်ဆိုင်ရာ စစ်တမ်းကောက်ယူမှုပုံစံ (kean/mining/data form -1)

(၉.၂) သင့်အသန့်ပတ်သက်သော သဘာဝပတ်ဝန်းကျင်အပေါ် မည်သို့သောအကြံပြုချက်များပေးလိုသနည်း။

(၉.၃) သင့်အသန့်ပတ်သက်သောကျန်းမာရေးစနစ်ဆိုင်ရာအပေါ် မည်သို့သောအကြံပြုချက်များပေးလိုသနည်း။

The Silent Ongoing Earthrights Abuses

3. Earth Rights Fourm Statement

Earth Rights Fourm Statement

Date: June 6th 2017

An earthrights forum was held on June 5th and 6th in Demawso, Kayah State. 109 people representing every township of Karenni State, ethnic political parties and civil society organisations attended this earthrights forum concerning land, mining, natural resources and mega development projects. They produced the following statement.

Suggestions on mining

1. To review whether existing mining projects have Free, Prior and Informed Consent (FPIC), Environmental Impact Assessments (EIA), Social Impact Assessments (SIA) and that mining projects are implemented in accordance with international standards; issuing permits to mining companies and groups according to this;
2. For companies, government and organisations responsible for mining projects that have destroyed local people's farmland, paddy land, orchards, natural environment and houses to provide remedies, compensation and rehabilitation to affected people;
3. For the state government to freely manage mining, inclusive of the local people's right to free management of mining and to equally distribute the benefits amongst the village and the township;
4. To legally recognise and form a state level mining monitoring group in Kayah (Karenni) State including civil society organisations, lawyers and technical experts;
5. To not allow new mining projects without guaranteed political change (A future federal union).

Suggestions on land

1. To draw, adopt and include indigenous people's customary land use management systems in the national land use policy, laws and regulations;
2. To grant indigenous people the right to freely own and manage their land based on the customary land use management practices of their region;
3. To reform laws that are not harmonious with and will extinguish indigenous people's customary land use management systems;
4. To allow indigenous people the right to freely participate at every step of the decision making process related to their land and natural resources;
5. For the government to provide and encourage better protection for the process of preserving indigenous people's land and natural resources.

Suggestions on natural resources

1. For the government to protect and recognise the natural resources that indigenous people have continually managed and preserved;
2. To practice Free, Prior and Informed Consent (FPIC), transparency and accountability concerning the extraction of natural resources within indigenous people's regions;
3. For the government to provide financial and technical support for indigenous people's natural resource conservation and rehabilitation activities;
4. To provide protection from impacts to the livelihoods, traditions and customs of local indigenous people reliant on natural resources, when extracting natural resource;
5. For natural resource extraction to be without impacts to the places recognised as conservation sites, protected forest and sacred by indigenous people.

Suggestions on mega-development projects

1. To practice Free, Prior and Informed Consent (FPIC) and for the local people to have the right participate at every step of the decision making process in mega-development projects;
2. To have transparency and accountability in implementing mega-development projects in Kayah (Karenni) State;
3. For mega-development projects to have the least impact on indigenous people's social lives and to respect and value the sacred places conserved according to their customs;
4. For mega-development projects to be implemented with priority to the community need and with guarantees to the local people according to international standards;
5. For the implementation of mega-development projects to give priority to the local workers and systematically manage the migrant workers.

4. Records on documenting the natural resources of Mawchi region.

(a) 2014 Results of water testing (1)


Eco-Lab

ပတ်ဝန်းကျင်ရေးရာဓာတ်ခွဲခန်း
Ecological Laboratory
စိမ်းစိုက်ရေးရာအသင်း (Advancing Life and Regenerating Motherland, ALARM)

စာအမှတ်
ရက်စွဲ

Reference Number/ စာအမှတ်: EL-R / 0164
Date / နေ့စွဲ: 21 March, 2014

Laboratory Report / ဓာတ်ခွဲခန်း အစီအရင်ခံစာ

နမူနာအမည် Sample Name: S4(ပို့လို့ ကေဘွဲ့ရာ - မော်ဖိုး)

ပို့သူအမည် Name of Sender: စောထက်မင်း

နမူနာ ရယူသည့် နေ့စွဲ
Sample Collection Date: 19/9/13

နမူနာ အမှတ်စဉ် Sample I.D. 0215

လိပ်စာ Address:

နမူနာ ရောက်ရှိသည့် နေ့စွဲ
Date Received: 18/3/2014

နမူနာ ရောက်ရှိသည့် အချိန်
Time: 2:00 pm

Test Results စမ်းသပ်ချက် အဖြေ

စဉ် Sr.	အရည်အသွေး Quality	ရလဒ် Result	နည်းစဉ် Method	စံသတ်မှတ်ချက် Standard Limit	မှတ်ချက် Remarks
၁	ဆွင့်ဖန်တိန်း (pH)	6.5	pH meters	6.5 – 8.5	Normal
၂	နောက်ကိယူ (Turbidity)	<5 FAU	Lovibond SpectroDirect Method No. 385	<10 FAU	Normal
၃	အမေး အသွက် (Hardness)	140 mg/L	Chemical analysis method (volumetric analysis)	<60 mg/L	Hard
၄	ရိပ်ဓာတ် (Arsenic)	100 ppb	LaMotte ARSENIC Test Kit Code 4053-01	<10 ppb	Above The Limit
၅	အိန် သတ္တုဓာတ် (Aluminium)	0.03 mg/l	Lovibond SpectroDirect Method No. 40	<0.2 mg/L	Normal
၆	သံ သတ္တုဓာတ် (Iron)	<0.1 mg/L	Lovibond SpectroDirect Method No. 220	<0.2 mg/L	Normal
၇	ကလိုရိုက် (Chloride)	7.96 mg/L	Chemical analysis method (volumetric analysis)	<250 mg/L	Normal

စစ်ဆေးပြီး Checked by


Lin Myat Myat Aung
 Lab. Technician II
 Eco-Lab
 ALARM

တာဝန်ခံ Signed by


Dr. Aye Aye Win
 Laboratory In-Charge
 EcoLab
 ALARM

The Silent Ongoing Earthrights Abuses

(a) 2014 Results of water testing (2)

Explanations

pH ^a

The pH of drinking water should be between 6.5 and 8.5.

Hardness ^d

Classification	Hardness in mg/L
Soft	0–60
Moderately hard	61–120
Hard	121–180
Very hard	≥ 181

Turbidity ^c

Maximum allowable limit for turbidity is 10 FAU (FAU=NTU) and desirable limit is 5.

Arsenic ^a

Arsenic standard for drinking water at 0.010 parts per million (10 parts per billion = 10 ppb) to protect consumers served by public water systems from the effects of long-term, chronic exposure to arsenic.

Aluminium ^a

Legal limit for drinking water of WHO is 0.2 ppm aluminum.

Iron ^b

Drinking water may not contain more than 200 ppb = 0.2 mg/L of iron.

Chloride ^a

The SMCL (suggested maximum contaminant level) for chloride is 250 mg/L which is due strictly to the objectionable salty taste produced in drinking water.

^a WHO Standard for Drinking Water (1993)

^d USGS Water-Quality Information

The Silent Ongoing Earthrights Abuses

(b) 2015 Results of water testing (1)



စိမ်းလန်း အိမ်ခြေ Eco-Lab ပတ်ဝန်းကျင်ရေးရာဓာတ်ခွဲခန်း
Ecological Laboratory
 စိမ်းလန်းအိမ်ခြေဖွံ့ဖြိုးတိုးတက်ရေးအသင်း (Advancing Life and Regenerating Motherland, ALARM)
 Reference Number/ တာမုတ်: EL-R / 410
 Date / နေ့စွဲ: 29 April , 2015

Laboratory Analysis Report / ဓာတ်ခွဲ စစ်ဆေးမှု အစီအရင်ခံစာ

နမူနာအမည် Sample Name: ရောင်းချ နမူနာ အမှတ်စဉ် Sample I.D. 833-837
 ပို့သူအမည် Name of Sender: Spectrum လိပ်စာ Address: 09250240766
 နမူနာ ရယူသည့် နေ့စွဲ နမူနာ ရောက်ရှိသည့် နေ့စွဲ နမူနာ ရောက်ရှိသည့် အချိန်
 Sample Collection Date: 26.3.15 Date Received: 23.4.15 Time: 2:35

(This laboratory analysis report is based solely on the sample submitted by the customer)
 (ဤဓာတ်ခွဲစစ်ဆေးမှုအစီအရင်ခံစာသည် ပေးပို့သူမှပို့ဆောင်ခဲ့သည့်နမူနာကိုသာအခြေခံထားပါသည်။)

Test Results စမ်းသပ်ချက် အဖြေ

စဉ် Sr.	အရည်အသွေး (Parameter) နမူနာအမည် (Name)	ခဲ သတ္တုဓါတ် (Lead)	နည်းစဉ် Method	မှတ်ချက် Remarks
၁	ကယားမော်လိုချောင်း M1	0.9 mg/L	AAS, Shimadzu AA-6200	Above The Limits
၂	ကယားမော်လိုချောင်း M2	ND		
၃	မိုင်းတွင်းအမှတ်(၃) T1	1.4 mg/L		Above The Limits
၄	ကျောင်းဆောက်ရေ S1	ND		
၅	သုံးရေ W1	ND		

*ND=not detected

စစ်ဆေးပြီး Checked by



Lin Myat Myat Aung
Lab. Technician II
Eco-Lab
ALARM

တာဝန်ခံ Signed by



Dr. Aye Aye Win
Laboratory In-Charge
EcoLab
ALARM

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 (ခွဲစိတ်ခွဲစာမျိုးစုံ ဖြန့်ချိရေးသားသော သဘောတူညီချက်မရှိဘဲ ယခုအစီအရင်ခံစာကို အပြည့်အဝနမူနာဖြင့် တစ်စိတ်တစ်ပိုင်း ဖြတ်ယူအသုံးပြုခြင်း မပြုလုပ်ရန်)

107, 2nd Floor, Building A, Highway Complex (Sinmalite), Kamayut, Yangon. Tel : 09 730 76412
 Website : <http://www.ecolabmyanmar.org> Email : info@ecolabmyanmar.org

Credit: PSW

(b) 2015 Results of water testing (2)

Explanations

Lead^{a b}

The WHO standard limit for Lead in drinking water is less than 0.01 mg/L. The concentration of lead in effluent water is less than 0.1 mg/L. US FDA standard limit of Lead in foods is less than 23 ppb.

a WHO Standard for Drinking Water (1993)

b EU Standard for Drinking Water

c Other Standards

d USGS Water-Quality Information

e Michigan Water Quality Standards(Rule 64)

f India General Standard for Discharge...

The Silent Ongoing Earthrights Abuses

(c) 2016 Results of water testing (1)



ပတ်ဝန်းကျင်ရေးရာဓာတ်ခွဲခန်း

Ecological Laboratory

စိမ်းလန်းအသိမြှင့်တင်ရေးအသင်း (Advancing Life and Regenerating Motherland, ALARM)



Reference Number/ စာအမှတ်: EL-R / 1016

Date / နေ့စွဲ: 20 July, 2016

Laboratory Analysis Report / ဓာတ်ခွဲစစ်ဆေးမှုအစီအရင်ခံစာ

Sample Profile နမူနာရေဖဝင်

နမူနာအမည် Sample Name	မိုလိုချောင်း	နမူနာအမှတ်/ Sample ID	1852
မြို့နယ် Township	ဇာတိမြို့နယ်	လတ္တီတွဒ် Latitude	
တိုင်း/ပြည်နယ် Division/State	ကယားပြည်နယ်	လောင်ဂျီတွဒ် Longitude	
ပေးပို့သူအမည် Sender Name		နမူနာကောက်ယူချိန် (နေ့၊ နာရီ) Sampling Time (Date, Time)	2.7.2016 11:00 am
အဖွဲ့အစည်း Organisation	Kayah Earthrights Action Network (KEAN)	နမူနာရောက်ရှိချိန် (နေ့၊ နာရီ) Arriving Time (Date, Time)	8.7.2016 11:00 am
ဆက်သွယ်ရန် Contact	09799252903		

(This laboratory analysis report is based solely on the sample submitted by the customer)
 (ဤဓာတ်ခွဲစစ်ဆေးမှုအစီအရင်ခံစာသည် ပေးပို့သူမှပို့ဆောင်ခဲ့သည့်နမူနာကိုသာအခြေခံထားပါသည်။)

Analysis Results စမ်းသပ်ချက်အဖြေ

Sr.	အရည်အသွေးညွှန်းကိန်း Quality Parameter	ရလဒ်အဖြေ Results		နည်းစဉ် Method	စံသတ်မှတ်ချက် Drinking Standard	စွန့်စေ့နှုန်း Effluent Standard	မှတ်ချက် Remarks
၁	ချဉ်ဖန်ကိန်း (pH)	7.4		pH meters	6.5 – 8.5	6.0 – 9.0*	Normal
၂	နေက်ကိန်း (Turbidity)	~	FAU	LovibondSpectroDirect Method No. 385	≤10 FAU	NG	-
၃	ပျော်ဝင်အနည်များ (Total dissolved solids)	~	mg/L	Consort Multi-parameters Conductivity meter	NG	≤2000 mg/l *	-
၄	ဆိုင်းကြွအနည် (TSS)	~	mg/L	LovibondSpectroDirect Method No. 383	NG	≤50 mg/L *	-
၅	လျှပ်စီးကိန်း (Conductivity)	~	mS/cm	Consort Multi-parameters Conductivity meter	≤2.5 mS/cm	NG	-
၆	အစေးအသွက် (Hardness)	66.66	mg/L	EDTA Titration Method (volumetric analysis)	≤60 mg/L	NG	Moderately Hard
	အစေးအသွက် (Hardness)	~	mg/L	LovibondSpectroDirect Method No. 200	≤60 mg/L	NG	
၇	အောက်ဆီဂျင် ပျော်ဝင်မှု (Dissolved Oxygen)	~	mg/L	Jenway Dissolved Oxygen Meter (Model 970)	≥ 3 mg/L	NG	-
၈	ဇီဝဆိုင်ရာအောက်ဆီဂျင်လိုအပ်ချက် (BOD ₅)	~	mg/L	Estimated by Eco-Lab with Jenway Dissolved Oxygen Meter (Model 970)	≤ 3 mg/L	≤ 50 mg/L *	-
၉	ဓာတ်ဆိုင်ရာအောက်ဆီဂျင်လိုအပ်ချက် (COD)	~	mg/L	LovibondSpectroDirect Method No. 130, 131, 132	NG	≤ 250 mg/L *	-
၁၀	ကလိုရိုက် (Chloride)	13.74	mg/L	Mohr's method (volumetric analysis)	≤ 250 mg/L	NG	Normal
	ကလိုရိုက် (Chloride)	~	mg/L	LovibondSpectroDirect Method No. 90	≤ 250 mg/L	NG	

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 107, 2nd Floor, Building A, Highway Complex (Sinmalite), Kamayut, Yangon. Tel: 0973076412
 Website : <http://www.ecolabmyanmar.org> Email : info@ecolabmyanmar.org

The Silent Ongoing Earthrights Abuses

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<div><div></div><div><div>ပတ်ဝန်းကျင်ရေးရာဓာတ်ခွဲခန်း</div><div>Ecological Laboratory</div></div><div><div>စိမ်းလန်းအိမ်ခြံမြေဖွံ့ဖြိုးတိုးတက်ရေးအသင်း (Advancing Life and Regenerating Motherland, ALARM)</div><div></div></div><div></div></div>							
စဉ် Sr.	အရည်အသွေးညွှန်းကိန်း Quality Parameter	ရလဒ်အဖြေResults		နည်းစဉ် Method	စံသတ်မှတ်ချက် Drinking Standard	စွန့်စေ့စံနှုန်း Effluent Standard	မှတ်ချက် Remarks
၁၁	ကလိုရင်း (Chlorine total residual)	~	mg/L	LovibondSpectroDirect Method No. 100	NG	≤ 0.2 mg/L *	-
၁၂	ကလိုရင်း (Free Chlorine)	~	mg/L	LovibondSpectroDirect Method No. 100	NG	NG	-
၁၃	ဆိုင်ယာန်ဆိုက် (Free Cyanide)	~	mg/L	LovibondSpectroDirect Method No. 157	≤ 0.07 mg/L	≤ 0.1 mg/L *	-
၁၄	နိုက်ထရိတ် နိုက်ထရိုဂျင် (Nitrate-Nitrogen)	~	mg/L	LovibondSpectroDirect Method No. 265,267	≤ 10 mg/L	NG	-
၁၅	နိုက်ထရိုက် (Nitrite)	< 0.01	mg/L	LovibondSpectroDirect Method No. 270	≤ 0.5 mg/L	NG	Normal
၁၆	ဖော့စဖိတ် (Ortho- Phosphate)	~	mg/L	LovibondSpectroDirect Method No. 320,321	NG	NG	-
၁၇	ဒါနိုသတ္တုဓာတ် (Aluminium)	~	mg/L	LovibondSpectroDirect Method No. 40	≤ 0.2 mg/L	NG	-
၁၈	ဗီနီဇာတ် (Arsenic)	~	mg/L	Lovibond Arsenic test kit code.no -400700	≤ 0.01 mg/L	≤ 0.1 mg/L *	-
	ဗီနီဇာတ် (Arsenic)	~	mg/L	AAS, Shimadzu AA-6200 As (193.7 nm)	≤ 10 ug/L	≤ 100 ug/L *	
၁၉	ကတ်ဒီယမ် (Cadmium)	~	mg/L	AAS, Shimadzu AA-6200 Cd (228.8 nm)	≤ 0.005 mg/L	≤ 0.1 mg/L *	-
၂၀	ကြေးနီ သတ္တုဓာတ် (Copper)	ND	mg/L	AAS, Shimadzu AA-6200 Cu (324.8 nm)	≤ 0.05 mg/L	≤ 0.5 mg/L *	Lower limit of detection = 0.03 mg/L
၂၁	သံသတ္တုဓာတ် (Iron)	~	mg/L	LovibondSpectroDirect Method No. 220	≤ 0.2 mg/L	≤ 3.5 mg/L *	Lower limit of detection = 0.4 mg/L
	သံသတ္တုဓာတ် (Iron)	ND	mg/L	AAS, Shimadzu AA-6200 Fe (248.3 nm)	≤ 0.2 mg/L	≤ 3.5 mg/L *	
၂၂	ပဲသတ္တုဓာတ် (Lead)	0.4	mg/L	AAS, Shimadzu AA-6200 Pb (283.3 nm)	≤ 0.01 mg/L	≤ 0.1 mg/L *	Above the limits
၂၃	မဂ္ဂနီဇ် (Manganese)	< 0.2	mg/L	LovibondSpectroDirect Method No. 240	≤ 0.5 mg/L	≤ 2 mg/L	Normal
၂၄	ပိုတက်စီယမ် (Potassium)	~	mg/L	LovibondSpectroDirect Method No. 340	≤ 20 mg/L	NG	-
၂၅	သွပ် သတ္တုဓာတ် (Zinc)	< 0.02	mg/L	LovibondSpectroDirect Method No. 400		≤ 2 mg/L *	Normal
၂၆	အမိုးနီးယား (Ammonia)	0.48	mg/L	Lovibond SpectroDirect Method No. 60	< 0.5 mg/L	< 10 mg/L	Normal

* Myanmar Emission Guideline 2015

NG=No Guideline

ND=Not Detected

စမ်းသပ်ပြီး Tested by



Daw May Myat Khine
Lab. Technician II
Ecological Laboratory

စစ်ဆေးပြီး Checked by



Daw Lin Myat Myat Aung
Lab. Technician I
Ecological Laboratory

တာဝန်ခံ Approved by



Dr. Aye Aye Win
Project Team Leader
Ecological Laboratory

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(ခရီးစဉ်များ၊ အခြားသောသဘာဝသဘာဝတရားရေးရာဓာတ်ခွဲခန်းမှ ရရှိသောရလဒ်များကို အခြေခံ၍ တစ်စိတ်တစ်ဒေသ ဖြတ်ယူအသုံးပြုခြင်း မပြုရပါ။)

107, 2nd Floor, Building A, Highway Complex (Sinmalite), Kamayut, Yangon. Tel: 0973076412

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ပတ်ဝန်းကျင်ရေးရာဓာတ်ခွဲခန်း Ecological Laboratory



စိမ်းလန်းအိမ်ခြေခွံ၊ ဖြိုးတိုးတက်ရေးအသင်း (Advancing Life and Regenerating Motherland, ALARM)

Reference Number/ တအမှတ်: EL-R / 1017

Date / နေ့စွဲ: 20 July, 2016

Laboratory Analysis Report / ဓာတ်ခွဲခန်းစစ်ဆေးမှုအစီအရင်ခံစာ

Sample Profile နမူနာရာဇဝင်

နမူနာအမည် Sample Name	တောင်ပေါ်ရွာ (စိမ့်/စမ်း)	နမူနာအမှတ်/ Sample ID	1853	
မြို့နယ် Township	မားတောင်းမြို့နယ်	လတ္တီတွဒ် Latitude		
တိုင်း/ပြည်နယ် Division/State	ကယားပြည်နယ်	လောင်ဂျီတွဒ် Longitude		
ပေးပို့သူအမည် Sender Name		နမူနာကောက်ယူချိန် (နေ့၊ နာရီ) Sampling Time (Date, Time)	2.7.2016	11:00 am
အဖွဲ့အစည်း Organisation	Kayah Earthrights Action Network (KEAN)	နမူနာရောက်ရှိချိန် (နေ့၊ နာရီ) Arriving Time (Date, Time)	8.7.2016	11:00 am
ဆက်သွယ်ရန် Contact	09799252903			

(This laboratory analysis report is based solely on the sample submitted by the customer)

(ဤဓာတ်ခွဲခန်းစစ်ဆေးမှုအစီအရင်ခံစာသည် ပေးပို့သူမှပို့ဆောင်ခဲ့သည့်နမူနာကိုသာအခြေခံထားပါသည်။)

Analysis Results စမ်းသပ်ချက်အဖြေ

စဉ် Sr.	အရည်အသွေးညွှန်းကိန်း Quality Parameter	ရလဒ်အဖြေ Results	နည်းစဉ် Method	စံသတ်မှတ်ချက် Drinking Standard	စွန့်စေ့နှုန်း Effluent Standard	မှတ်ချက် Remarks
၁	ချဉ်ဇန်ကိန်း (pH)	7.6	pH meters	6.5 – 8.5	6.0 – 9.0*	Normal
၂	နောက်ကျိုးမှု (Turbidity)	~ FAU	LovibondSpectroDirect Method No. 385	≤10 FAU	NG	-
၃	ပျော်ဝင်အနည်များ (Total dissolved solids)	~ mg/L	Consort Multi-parameters Conductivity meter	NG	≤2000 mg/l *	-
၄	ဆိုင်ကြွအနယ် (TSS)	~ mg/L	LovibondSpectroDirect Method No. 383	NG	≤50 mg/L *	-
၅	လျှပ်စီးကိန်း (Conductivity)	~ mS/cm	Consort Multi-parameters Conductivity meter	≤2.5 mS/cm	NG	-
၆	အစေးအသွက် (Hardness)	111.11 mg/L	EDTA Titration Method (volumetric analysis)	≤60 mg/L	NG	Moderately Hard
	အစေးအသွက် (Hardness)	~ mg/L	LovibondSpectroDirect Method No. 200	≤60 mg/L	NG	
၇	အောက်ဆီဂျင် ပျော်ဝင်မှု (Dissolved Oxygen)	~ mg/L	Jenway Dissolved Oxygen Meter (Model 970)	≥ 3 mg/L	NG	-
၈	ဇီဝဆိုင်ရာအောက်ဆီဂျင်လိုအပ်ချက် (BOD ₅)	~ mg/L	Estimated by Eco-Lab with Jenway Dissolved Oxygen Meter (Model 970)	≤ 3 mg/L	≤ 50 mg/L *	-
၉	ဓာတ်ဆိုင်ရာအောက်ဆီဂျင်လိုအပ်ချက် (COD)	~ mg/L	LovibondSpectroDirect Method No. 130, 131, 132	NG	≤ 250 mg/L *	-
၁၀	ကလိုရိုက် (Chloride)	18.32 mg/L	Mohr's method (volumetric analysis)	≤ 250 mg/L	NG	Normal
	ကလိုရိုက် (Chloride)	~ mg/L	LovibondSpectroDirect Method No. 90	≤ 250 mg/L	NG	

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စဉ် Sr.	အရည်အသွေးညွှန်းကိန်း Quality Parameter	ရလဒ်အဖြေResults		နည်းစဉ် Method	စံသတ်မှတ်ချက် Drinking Standard	မွှ့်ရေစံနှုန်း Effluent Standard	မှတ်ချက် Remarks
၁၁	ကလိုရင်း (Chlorine total residual)	~	mg/L	LovibondSpectroDirect Method No. 100	NG	≤ 0.2 mg/L *	-
၁၂	ကလိုရင်း (Free Chlorine)	~	mg/L	LovibondSpectroDirect Method No. 100	NG	NG	-
၁၃	ဆိုင်းယန်ဆိုက် (Free Cyanide)	~	mg/L	LovibondSpectroDirect Method No. 157	≤ 0.07 mg/L	≤ 0.1 mg/L *	-
၁၄	နိုက်ထြိတ် နိုက်ထရိုဂျင် (Nitrate-Nitrogen)	~	mg/L	LovibondSpectroDirect Method No. 265,267	≤ 10 mg/L	NG	-
၁၅	နိုက်ထြိုက် (Nitrite)	0.18	mg/L	LovibondSpectroDirect Method No. 270	≤ 0.5 mg/L	NG	Normal
၁၆	ဧရာစဖိတ် (Ortho- Phosphate)	~	mg/L	LovibondSpectroDirect Method No. 320,321	NG	NG	-
၁၇	ဒါနိုသတ္တုဓာတ် (Aluminium)	~	mg/L	LovibondSpectroDirect Method No. 40	≤ 0.2 mg/L	NG	-
၁၈	ဗိန်းဓာတ် (Arsenic)	~	mg/L	Lovibond Arsenic test kit code.no -400700	≤ 0.01 mg/L	≤ 0.1 mg/L *	-
	ဗိန်းဓာတ် (Arsenic)	~	mg/L	AAS, Shimadzu AA-6200 As (193.7 nm)	≤ 10 ug/L	≤ 100 ug/L *	
၁၉	ကက်ဒမီယမ် (Cadmium)	~	mg/L	AAS, Shimadzu AA-6200 Cd (228.8 nm)	≤ 0.005 mg/L	≤ 0.1 mg/L *	-
၂၀	ကြေးနီ သတ္တုဓာတ် (Copper)	ND	mg/L	AAS, Shimadzu AA-6200 Cu (324.8 nm)	≤ 0.05 mg/L	≤ 0.5 mg/L *	Lower limit of detection = 0.03 mg/L
၂၁	သံသတ္တုဓာတ် (Iron)	~	mg/L	LovibondSpectroDirect Method No. 220	≤ 0.2 mg/L	≤ 3.5 mg/L *	Lower limit of detection = 0.4 mg/L
	သံသတ္တုဓာတ် (Iron)	ND	mg/L	AAS, Shimadzu AA-6200 Fe (248.3 nm)	≤ 0.2 mg/L	≤ 3.5 mg/L *	
၂၂	ဗဲသတ္တုဓာတ် (Lead)	0.4	mg/L	AAS, Shimadzu AA-6200 Pb (283.3 nm)	≤ 0.01 mg/L	≤ 0.1 mg/L *	Above the limits
၂၃	မဂ္ဂနီဇ် (Manganese)	< 0.2	mg/L	LovibondSpectroDirect Method No. 240	≤ 0.5 mg/L	≤ 2 mg/L	Normal
၂၄	ပိုတက်စီယမ် (Potassium)	~	mg/L	LovibondSpectroDirect Method No. 340	≤ 20 mg/L	NG	-
၂၅	သွပ် သတ္တုဓာတ် (Zinc)	0.35	mg/L	LovibondSpectroDirect Method No. 400		≤ 2 mg/L *	Normal
၂၆	အမိုးနီးယား (Ammonia)	0.66	mg/L	Lovibond SpectroDirect Method No. 60	< 0.5 mg/L	< 10 mg/L	Above DW limit

ND=Not Detected

တၢ်နီၤအၢၤApproved by

Dr. Aye Aye Win
Project Team Leader
Ecological Laboratory

[illegible]

Website : <http://www.ecolabmyanmar.org> Email : info@ecolabmyanmar.org



ပတ်ဝန်းကျင်ရေးရာဓာတ်ခွဲခန်း
Ecological Laboratory



စိမ်းလန်းအိမ်ခြေပျံ့ဖြိုးတိုးတက်ရေးအသင်း (Advancing Life and Regenerating Motherland, ALARM)

Reference Number/ တာအမှတ်: EL-R / 1018

Date / နေ့စွဲ: 20 July, 2016

Laboratory Analysis Report / ဓာတ်ခွဲစစ်ဆေးမှုအစီအရင်ခံစာ

Sample Profile နမူနာရာဇဝင်

နမူနာအမည် Sample Name	အောက်ရွာ (စိမ်း/စမ်း)	နမူနာအမှတ်/ Sample ID	1854	
မြို့နယ် Township	မားတောင်းမြို့နယ်	လတ္တီတွဒ်- Latitude		
တိုင်း/ပြည်နယ် Division/State	ကယားပြည်နယ်	လောင်ဂျီတွဒ် Longitude		
ပေးပို့သူအမည် Sender Name		နမူနာကောက်ယူချိန် (နေ့၊ နာရီ) Sampling Time (Date, Time)	2.7.2016	11:00 am
အဖွဲ့အစည်း Organisation	Kayah Earthrights Action Network (KEAN)	နမူနာရောက်ရှိချိန် (နေ့၊ နာရီ) Arriving Time (Date, Time)	8.7.2016	11:00 am
ဆက်သွယ်ရန် Contact	09799252903			

(This laboratory analysis report is based solely on the sample submitted by the customer)

(ဤဓာတ်ခွဲစစ်ဆေးမှုအစီအရင်ခံစာသည် ပေးပို့သူမှပို့ဆောင်ခဲ့သည့်နမူနာကိုသာအခြေခံထားပါသည်။)

Analysis Results စမ်းသပ်ချက်အဖြေ

စဉ် Sr.	အရည်အသွေးညွှန်းကိန်း Quality Parameter	ရလဒ်အဖြေ Results		နည်းစဉ် Method	စံသတ်မှတ်ချက် Drinking Standard	စွန့်စေ့နှုန်း Effluent Standard	မှတ်ချက် Remarks
၁	ချဉ်ဖန်ကိန်း (pH)	5.6		pH meters	6.5 – 8.5	6.0 – 9.0*	In Acid Range
၂	နောက်ကျိမှု (Turbidity)	~	FAU	LovibondSpectroDirect Method No. 385	≤10 FAU	NG	-
၃	ပျော်ဝင်အနည်များ (Total dissolved solids)	~	mg/L	Consort Multi-parameters Conductivity meter	NG	≤2000 mg/l *	-
၄	ဆိုင်းကြွအနည် (TSS)	~	mg/L	LovibondSpectroDirect Method No. 383	NG	≤50 mg/L *	-
၅	လျှပ်စီးကိန်း (Conductivity)	~	mS/cm	Consort Multi-parameters Conductivity meter	≤2.5 mS/cm	NG	-
၆	အစေးအသွက် (Hardness)	38.88	mg/L	EDTA Titration Method (volumetric analysis)	≤60 mg/L	NG	Soft
	အစေးအသွက် (Hardness)	~	mg/L	LovibondSpectroDirect Method No. 200	≤60 mg/L	NG	
၇	အောက်ဆီဂျင် ပျော်ဝင်မှု (Dissolved Oxygen)	~	mg/L	Jenway Dissolved Oxygen Meter (Model 970)	≥ 3 mg/L	NG	-
၈	ဇီဝဆိုင်ရာအောက်ဆီဂျင်လိုအပ်ချက် (BOD ₅)	~	mg/L	Estimated by Eco-Lab with Jenway Dissolved Oxygen Meter (Model 970)	≤ 3 mg/L	≤ 50 mg/L *	-
၉	ဓာတုဆိုင်ရာအောက်ဆီဂျင်လိုအပ်ချက် (COD)	~	mg/L	LovibondSpectroDirect Method No. 130, 131, 132	NG	≤ 250 mg/L *	-
၁၀	ကလိုရိုက် (Chloride)	18.32	mg/L	Mohr's method (volumetric analysis)	≤ 250 mg/L	NG	Normal
	ကလိုရိုက် (Chloride)	~	mg/L	LovibondSpectroDirect Method No. 90	≤ 250 mg/L	NG	

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(ခါတ်ခွဲခန်း၏ စာဖြင့်ရေးသားသောသဘောတူညီချက်မရရှိဘဲယခုအစီအရင်ခံစာကိုအပြည့်အစုံဖူး၍ တစ်စိတ်တစ်ပိုင်း ဖြတ်ယူအသုံးပြုခြင်း၊ မိတ္တူကူးခြင်းမပြုရ)

107, 2nd Floor, Building A, Highway Complex (Sinmalite), Kamayut, Yangon. Tel: 0973076412

Website : <http://www.ecolabmyanmar.org> Email : info@ecolabmyanmar.org

The Silent Ongoing Earthrights Abuses

(c) 2016 Results of water testing (6)

<div><div><div><div>ပတ်ဝန်းကျင်ရေးရာဓာတ်ခွဲခန်း</div><div>Ecological Laboratory</div></div><div></div></div><div>စိမ်းလန်းအိမ်မြေဖွံ့ဖြိုးတိုးတက်ရေးအသင်း (Advancing Life and Regenerating Motherland, ALARM)</div></div>							
စဉ် Sr.	အရည်အသွေးညွှန်းကိန်း Quality Parameter	ရလဒ်အဖြေResults		နည်းစဉ် Method	စံသတ်မှတ်ချက် Drinking Standard	စွန့်စေ့နှုန်း Effluent Standard	မှတ်ချက် Remarks
၁၁	ကလိုရင်း (Chlorine total residual)	~	mg/L	LovibondSpectroDirect Method No. 100	NG	≤ 0.2 mg/L *	-
၁၂	ကလိုရင်း (Free Chlorine)	~	mg/L	LovibondSpectroDirect Method No. 100	NG	NG	-
၁၃	ဆိုင်ယာနိုက် (Free Cyanide)	~	mg/L	LovibondSpectroDirect Method No. 157	≤ 0.07 mg/L	≤ 0.1 mg/L *	-
၁၄	နိုက်ထြိတ် နိုက်ထရိုဂျင် (Nitrate-Nitrogen)	~	mg/L	LovibondSpectroDirect Method No. 265,267	≤ 10 mg/L	NG	-
၁၅	နိုက်ထြိတ် (Nitrite)	< 0.01	mg/L	LovibondSpectroDirect Method No. 270	≤ 0.5 mg/L	NG	Normal
၁၆	ဖော့စဖိတ် (Ortho- Phosphate)	~	mg/L	LovibondSpectroDirect Method No. 320,321	NG	NG	-
၁၇	ဒါန့်သတ္တုဓာတ် (Aluminium)	~	mg/L	LovibondSpectroDirect Method No. 40	≤ 0.2 mg/L	NG	-
၁၈	ဗီနီဇာတ် (Arsenic)	~	mg/L	Lovibond Arsenic test kit code.no -400700	≤ 0.01 mg/L	≤ 0.1 mg/L *	-
	ဗီနီဇာတ် (Arsenic)	~	mg/L	AAS, Shimadzu AA-6200 As (193.7 nm)	≤ 10 ug/L	≤ 100 ug/L *	
၁၉	ကတ်ဒီယမ် (Cadmium)	~	mg/L	AAS, Shimadzu AA-6200 Cd (228.8 nm)	≤ 0.005 mg/L	≤ 0.1 mg/L *	-
၂၀	ကြေးနီ သတ္တုဓာတ် (Copper)	ND	mg/L	AAS, Shimadzu AA-6200 Cu (324.8 nm)	≤ 0.05 mg/L	≤ 0.5 mg/L *	Lower limit of detection = 0.03 mg/L
၂၁	သံသတ္တုဓာတ် (Iron)	~	mg/L	LovibondSpectroDirect Method No. 220	≤ 0.2 mg/L	≤ 3.5 mg/L *	Lower limit of detection = 0.4 mg/L
	သံသတ္တုဓာတ် (Iron)	ND	mg/L	AAS, Shimadzu AA-6200 Fe (248.3 nm)	≤ 0.2 mg/L	≤ 3.5 mg/L *	
၂၂	ခဲသတ္တုဓါတ် (Lead)	1.1	mg/L	AAS, Shimadzu AA-6200 Pb (283.3 nm)	≤ 0.01 mg/L	≤ 0.1 mg/L *	Above the limits
၂၃	မဂ္ဂနီဇံ (Manganese)	< 0.2	mg/L	LovibondSpectroDirect Method No. 240	≤ 0.5 mg/L	≤ 2 mg/L	Normal
၂၄	ပိုတက်စီယမ် (Potassium)	~	mg/L	LovibondSpectroDirect Method No. 340	≤ 20 mg/L	NG	-
၂၅	သွပ် သတ္တုဓါတ် (Zinc)	0.28	mg/L	LovibondSpectroDirect Method No. 400		≤ 2 mg/L *	Normal
၂၆	အမိုးနီးယား (Ammonia)	0.1	mg/L	Lovibond SpectroDirect Method No. 60	< 0.5 mg/L	< 10 mg/L	Normal

* Myanmar Emission Guideline 2015

NG=No Guideline

ND=Not Detected

စမ်းသပ်ပြီး Tested by

စစ်ဆေးပြီး Checked by

တာဝန်ခံ Approved by



Daw May Myat Khine

Lab. Technician II

Ecological Laboratory



Daw Lin Myat Myat Aung

Lab. Technician I

Ecological Laboratory



Dr. Aye Aye Win

Project Team Leader


Ecological Laboratory

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(ဤစာတမ်းသည် မူရင်းအတိုင်း ပုံနှိပ်ခြင်းမပြုမီတွင် ဝန်ခံချက် ရရှိရန် လိုအပ်ပါသည်။ မိတ္တူကူးခြင်းမပြုရပါ။)


107, 2nd Floor, Building A, Highway Complex (Sinmalite), Kamayut, Yangon. Tel: 0973076412

Website : <http://www.ecolabmyanmar.org> Email : info@ecolabmyanmar.org

(c) 2016 Results of water testing (7)



ပတ်ဝန်းကျင်ရေးရာဓာတ်ခွဲခန်း
Ecological Laboratory



စိမ်းလန်းအသိမြှင့်တင်ရေးအသင်း (Advancing Life and Regenerating Motherland, ALARM)

- 13. Cyanide^{a g}**
 The WHO Standard limit for cyanide in drinking water is less than 0.07 mg/L. Effluent standard limit for cyanide is 0.1 mg/L in Myanmar emission guideline.
- 14. Nitrate-Nitrogen^h**
 The US EPA Drinking Standard limit for nitrate-nitrogen is less than 10mg/L.
- 15. Nitrite^b**
 EU Recommended limit for drinking standard is 0.5 mg/L.
- 16. Phosphate**
 There is no guidelines for ortho-phosphate in both drinking and effluent waters.
- 17. Aluminium^{a b}**
 EU and WHO standard limit for drinking water is 0.2 ppm(mg/L) aluminum.
- 18. Arsenic^{a g}**
 Arsenic concentration of WHO drinking water standard is at 0.010 parts per million (10 parts per billion = 10 ppb) and the Myanmar emission guideline value is 0.1 ppm (100 ppb).
- 19. Cadmium^{a g}**
 The WHO drinking standard limit is 0.005 mg/L and the Myanmar effluent limit is 0.1 mg/L.
- 20. Copper^{f g}**
 The India drinking standard limit is 0.05 mg/L and the Myanmar effluent limit is 0.5 mg/L.
- 21. Iron^{b g}**
 The EU drinking standard limit is 0.2 mg/L and the Myanmar effluent limit is 3.5 mg/L.
- 22. Lead^{a g}**
 The WHO drinking standard limit is 0.01 mg/L and the Myanmar effluent limit is 0.1 mg/L.
- 23. Manganese^a**
 WHO drinking water standard limit is 0.5 mg/L and WHO's effluent standard limit is 2 mg/L.
- 24. Potassium^c**
 Legal limit for drinking water is 20 mg/L
- 25. Zinc^a**
 The Myanmar effluent limit is 2 mg/L.

^a WHO Standard for Drinking Water (1993)

^b EU Standard for Drinking Water

^c Other Standards

^d USGS Water-Quality Information

^e Michigan Water Quality Standards(Rule 64)

^f India General Standard for Discharge...

^g Myanmar Emission Guideline (2015 December 29)

^h US EPA Standards

(d) 2017 Results of water testing (1)



စိမ်းလန်းအိမ်ခြံမြေ ဦးတိုးတက်ရေးအသင်း (Advancing Life and Regenerating Motherland, ALARM)

Reference Number/ စာအမှတ်: EL-R / 01709

Date / ഒപ്പ്: 10 July, 2017

Laboratory Analysis Report / ဓာတ်ခွဲစစ်ဆေးမှုအစီအရင်ခံစာ

Sample Profilesနမူနာများ

နမူနာအမည် / Sample Name	(၃) ဘုတ်ကုန်း	နမူနာအမှတ် / Sample ID	2796	
နေရာ (မြို့နယ်) / Location (Township)	-	လတ္တီတွဒ် / Latitude		
နေရာ (တိုင်း/ပြည်နယ်) / Location (Division/State)	-	လောင်ဂျီတွဒ် / Longitude		
ပေးပို့သူအမည် / Sender Name	-	နမူနာစုစုစုစု (နေ့၊ နာရီ) / Sampling Time (Date, Time)	1.4.2017	
အဖွဲ့အစည်း / Organisation	Kayah Earthrights Action Network (KEAN)	နမူနာရောက်ရှိချိန် (နေ့၊ နာရီ) / Arriving Time (Date, Time)	4.7.2017	11:00 am
ဆက်သွယ်ရန် / Contact	-			

(This laboratory analysis report is based solely on the sample submitted by the customer)

(ဤစာတမ်းရှိစစ်ဆေးမှုအစီရင်ခံစာသည် ဖေဖော်ဝါရီလ ၂၀၁၆ ခုနှစ်ကတည်းက အခြေခံထားပါသည်။)

Analysis Results စမ်းသပ်ချက်အရ

စဉ် Sr.	အဆင့်အသွေးညွှန်းကိန်း Quality Parameter	ရလဒ်အရေစာရင်း Results		နည်းစဉ် Method	မိသားစုမှတ်ချက် Drinking Standard	စွန့်ခွဲမှုစံနှုန်း Effluent Standard	မှတ်ချက် Remarks
၁	ချဉ်ဖန်ကိန်း (pH)	7.8		pH meters	6.5 – 8.5	6.0 – 9.0 *	Normal
၂	ဝန်ဘက်ကွဲမှု (Turbidity)	~	FAU	Lovibond SpectroDirect Method No. 385	≤10 FAU	NG	-
၃	ဆိုင်ရာအနယ် (TSS)	0	mg/L	Oven-drying method	NG	≤50 mg/L *	Normal
၄	သံ သတ္တုဓာတ် (Iron)	~	mg/L	Lovibond SpectroDirect Method No. 220	≤ 0.2 mg/L	≤ 3.5 mg/L *	-
၅	သွပ် သတ္တုဓာတ် (Zinc)	~	mg/L	Lovibond SpectroDirect Method No. 400		≤ 2 mg/L *	-
၆	Phenol	~	mg/L	Lovibond SpectroDirect Method No. 315	0.001 mg/L	0.5 mg/L*	-
၇	အခစအသွက် (Hardness)	~	mg/L	EDTA Titration Method (volumetric analysis)	≤60 mg/L	NG	-
	အခစအသွက် (Hardness)	~	mg/L	LovibondSpectroDirect Method No. 200	≤60 mg/L	NG	
၈	ဓာတုဆိုင်ရာအောက်ဆီဂျင်လိုအပ်ချက် (COD)	~	mg/L	LovibondSpectroDirect Method No. 130, 131, 132	NG	≤ 250 mg/L *	-
၉	ဇီဝဆိုင်ရာအောက်ဆီဂျင်လိုအပ်ချက် (BOD ₅)	~	mg/L	Estimated by Eco-Lab with Jenway Dissolved Oxygen Meter (Model 970)	≤ 3 mg/L	≤ 50 mg/L *	-

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(ခေါ်ဝေါ်ခြင်း၏ အခြေခံအားသာအားသာအားသာဟူ၍ ခုနစ်မရရှိပါ။ သဘာဝစီရင်ခံစာကို အပြည့်အဝနားလည်၍ တစ်စိတ်တစ်ဒိုင်း ဖြတ်ယူစေသင့်ခြင်း၊ မိတ္တူကူးခြင်းမပြုရန်။)

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The Silent Ongoing Earthrights Abuses

(d). 2017 Results of water testing (2)

	<p>ပတ်ဝန်းကျင်ရေးရာဓာတ်ခွဲခန်း Ecological Laboratory</p>						
<p>စိမ်းလန်းအပ်မြေခွံ ဖြူတိုးတက်ရေးအသင်း (Advancing Life and Regenerating Motherland, ALARM)</p>							
စဉ် Sr.	အရည်အသွေးညွှန်းကိန်း Quality Parameter	ရလဒ်အဖြေ Results		နည်းစဉ် Method	သောက်သုံးရန် Drinking Standard	ပစ္စည်းစုစည်းမှု Effluent Standard	မှတ်ချက် Remarks
၁၀	ကလိုရင်း (Chlorine total residual)	~	mg/L	LovibondSpectroDirect Method No. 100	NG	≤ 0.2 mg/L *	-
၁၁	ဆိုင်ယာနိုက် (Free Cyanide)	~	mg/L	LovibondSpectroDirect Method No. 157	≤ 0.07 mg/L	≤ 0.1 mg/L *	-
၁၂	ဖော့စဖာတ် (Phosphorous)	~	mg/L	Lovibond SpectroDirect Method No. 320, 321	NG	2 mg/L *	-
၁၃	မဂ္ဂနီဇီ (Manganese)	~	mg/L	LovibondSpectroDirect Method No. 240	≤ 0.5 mg/L	≤ 2 mg/L	-
၁၄	ပိုတက်စီယမ် (Potassium)	~	mg/L	LovibondSpectroDirect Method No. 340	≤ 20 mg/L	NG	-
၁၅	ကလိုရင်း (Free Chlorine)	~	mg/L	LovibondSpectroDirect Method No. 100	NG *	NG	-
၁၆	ကြေးနီ သတ္တုဓာတ် (Copper)	ND	mg/L	AAS, Shimadzu AA-6200 Cu (324.8 nm)	≤ 0.05 mg/L	≤ 0.5 mg/L *	Lower limit of detection=0.02mg/L
၁၇	အိန်ဒီယမ် (Arsenic)	~	mg/L	Lovibond Arsenic test kit code.no -400700	≤ 0.01 mg/L	≤ 0.1 mg/L *	
	အိန်ဒီယမ် (Arsenic)	~	mg/L	AAS, Shimadzu AA-6200 As (193.7 nm)	≤ 0.01 mg/L	≤ 0.1 mg/L *	
၁၈	ကက်သီယမ် (Cadmium)	0.02	mg/L	AAS, Shimadzu AA-6200 Cd (228.8 nm)	≤ 0.005 mg/L	≤ 0.1 mg/L *	Above DW limit
၁၉	ခဲ သတ္တုဓာတ် (Lead)	0.51	mg/L	AAS, Shimadzu AA-6200 Pb (283.3 nm)	≤ 0.01 mg/L	≤ 0.1 mg/L *	Above the limits

* Myanmar Emission Guideline 2015

NG=No Guideline

ND= Not Detected

စမ်းသပ်ပြီး Tested by

စစ်ဆေးပြီး Checked by

တာဝန်ခံ Approved by



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Lab. Technician I
Ecological Laboratory
ALARM



Dr. Aye Aye Win
Project Team Leader
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* Myanmar Emission Guideline 2015

NG=No Guideline

ND= Not Detected


စမ်းသပ်ပြီး: Tested by

စစ်ဆေးပြီး: Checked by

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 Email: alarm.myanmar@gmail.com | website: www.myanmaraffairs.com

နောက်ကြည့်(က) ၂၀၁၈ခုနှစ်၊ ဖေဖော်ဝါရီလ(၁၃)ရက်နေ့မှ ကြေး ပျဉ်းနန်းလိုက်သော
သတိကြေး နည်းဥပဒေ၏လုပ်ငန်းလိမ့်မည်အစား၊
လုပ်ငန်းခြေပိုင်းညွှန်ကြားမှုအဖွဲ့အစည်း၊ ခြေပိုင်းညွှန်ကြားမှု
အဖွဲ့အစည်းများ၏လုပ်ငန်းများအားလုံးအားလုံးအားလုံး

၂၀၁၈ခုနှစ်၊

ဖေဖော်ဝါရီလ(၁၃)ရက်နေ့၊

ပုပ္ဖန်းလို့ကုသော

သတိပြုနည်းဥပဒေပါ နောက် ဆက်အဖွဲ့အစည်းအရမ်း

နောက်ဆက်တွဲ(က)

ဓာတ်သတ္တု ထုတ်လုပ်ရာတွင် အသုံးပြုရမည့်

စက်ယန္တရားနှင့် စက်ကိရိယာများ

(မြန်မာ့သတ္တုတွင်းဥပဒေပုဒ်မ ၁၁)

ခွင့်ပြုမိန့်ရသူသည် ဓာတ်သတ္တုများကို အကြီးစားထုတ်လုပ်ခြင်း၊ အလတ်စား ထုတ်လုပ်ခြင်း၊ အသေးစား ထုတ်လုပ်ခြင်းနှင့် လက်လုပ်လက်စား ထုတ်လုပ်ခြင်းတို့ပြုရာတွင် အောက်ဖော်ပြပါ စက်ယန္တရားနှင့် စက်ကိရိယာများထက်ပို၍ အသုံးမပြုရ-

စဉ်	လုပ်ကွက် စရိယာ အကျယ်အဝန်း	ယာဉ်/ယန္တရား				မြေသယ်ယာဉ်		မှတ်ချက်
		Backhoe/ Shovels	Dozer	Loader	HP	အရေအတွက်	ဝန်ဆောင်မှု အင်အား (ယာဉ်+ဝန်)	
(က)	လက်လုပ်လက်စား							မြေထိုးစက်/ မြေကော်စက်များ သုံးစွဲခွင့် မပြု။
	(၁) စက်မှု တွင်းထွက် ကုန်ကြမ်း	-	-	-	-	၁ စီး	(၁) စီးလျှင် ၁.၅ တန် အထိ	အင်ဂျင်စက်တစ်ခုလျှင် မြင်းကောင်ရေ ၂၅ ထက် မပိုအောင် စုစုပေါင်း မြင်းကောင်ရေ ၅၀ ထက်မပိုသော အင်ဂျင်စက်ကိုသာ အသုံးပြုနိုင်သည်။
	(၂) ရွှေနှင့် အခြား အဖိုးတန် သတ္တုမှအပ အခြား သတ္တုနှင့် အလှဆင် ကျောက်	-	-	-	-	-	-	အင်ဂျင်စက်တစ်ခုလျှင် မြင်းကောင်ရေ ၂၅ ထက် မပိုအောင် စုစုပေါင်း မြင်းကောင်ရေ ၅၀ ထက်မပိုသော အင်ဂျင်စက်ကိုသာ အသုံးပြုနိုင်သည်။
	(၃) ရွှေနှင့် အခြား အဖိုးတန် သတ္တု	-	-	-	-	-	-	အင်ဂျင်စက်ပစ္စည်း တစ်ခုလျှင်မြင်းကောင်ရေ ၂၅ ထက် မပိုအောင် အသုံးပြုနိုင်သည်။

The Silent Ongoing Earthrights Abuses

စဉ်	လုပ်ကွက် ဧရိယာ အကျယ်အဝန်း	ယာဉ်/ယန္တရား				မြေသယ်ယာဉ်		မှတ်ချက်
		Backhoe/ Shovels	Dozer	Loader	HP	အရေ အတွက်	ဝန်ဆောင်မှု အင်အား (ယာဉ်+ဝန်)	
(ခ)	အသေးစား (၁) စက်မှု တွင်းထွက် ကုန်ကြမ်း ပစ္စည်း/ ကျောက်	(၁) စီး Bucket Capacity (3m ³) ထက်မပို သော	(၁) စီး Operating Weight 17000 kg ထက်မပို သော	(၁) စီး Bucket Capacity (1.3 to 1.5m ³) ထက်မ ပိုသော	(၁) စီး လျှင် ၁၅၀ HP ထက်မ ပိုသော	(၃) စီး	(၁) စီး လျှင် ၁၅ တန်ထက် မပိုသော	အင်ဂျင်စက် တစ်ခုလျှင် မြင်းကောင်ရေ ၅၀ ထက် မပိုစေဘဲ စုစုပေါင်း မြင်းကောင်ရေ ၃၀၀ ထက် မပိုသော အင်ဂျင်စက် ကိုသာအသုံးပြုနိုင်သည်။
	(၂) ရွှေနှင့် အိုးတန် သတ္တုမှ အပအခြား သတ္တုဖြစ်လျှင်	(၁) စီး Bucket Capacity (3m ³) ထက် မပိုသော	(၁) စီး Operating Weight 17000 kg ထက် မပိုသော	(၁) စီး Bucket Capacity (1.3 to 1.5m ³) ထက် မပိုသော	(၁) စီး လျှင် ၁၅၀ HP ထက်မ ပိုသော	(၃) စီး	(၁) စီး လျှင် ၁၅ တန်ထက် မပိုသော	အင်ဂျင်စက် တစ်ခုလျှင် မြင်းကောင်ရေ ၅၀ ထက် မပိုစေဘဲ စုစုပေါင်း မြင်းကောင်ရေ ၃၀၀ ထက် မပိုသော အင်ဂျင်စက် ကိုသာအသုံးပြုနိုင်သည်။
	(၃) ရွှေနှင့် အိုးတန် သတ္တု	(၁) စီး Bucket Capacity (3 m ³) ထက် မပိုသော	(၁) စီး Operating Weight 17000 kg ထက် မပိုသော	(၁) စီး Bucket Capacity (1.3 to 1.5m ³) ထက် မပိုသော	(၁) စီး လျှင် ၁၅၀ HP ထက်မ ပိုသော	(၂) စီး	(၁) စီးလျှင် ၆ တန် ထက်မပို သော	အင်ဂျင်စက် တစ်ခုလျှင် မြင်းကောင်ရေ ၅၀ ထက် မပိုစေဘဲ စုစုပေါင်း မြင်းကောင်ရေ ၃၀၀ ထက် မပိုသော အင်ဂျင်စက်ကို သာအသုံးပြုနိုင်သည်။
(ဂ)	အလတ်စား	(၃) စီး Bucket Capacity (7 m ³) ထက်မပို သော	(၃) စီး Operating Weight 30000 kg ထက်မပို သော	(၃) စီး Bucket Capacity (3.1 to 5 m ³) ထက်မ ပိုသော	(၁) စီး လျှင် ၁၅၀ HP ထက်မ ပိုသော	(၁၂) စီး	(၁) စီးလျှင် ၃၀ တန် ထက်မပို သော (စုစုပေါင်း တန် ၁၂၀ ထိ)	
(ဃ)	အကြီးစား	-	-	-	-	-	-	Mine Design နှင့် ဖြစ်မြောက်နိုင်စွမ်း လေ့လာရေး အစီရင်ခံစာ ပါ အတိုင်း

မှတ်ချက် ။ ဟင်းလင်းဖွင့် တူးဖော်ထုတ်လုပ်သည့်စနစ် အတွက်သာဖြစ်သည်။ အခြား သတ္တုတွင်း လုပ်ငန်းသုံး
စက်ပစ္စည်းများအတွက် သီးခြား တင်ပြလျှောက်ထားရန် လိုအပ်ပါသည်။

နောက်ဆက်တွဲ(ခ)

ဓာတ်သတ္တု လုပ်ငန်းဆောင်ရွက်မှု အမျိုးအစားအလိုက် ပုံသေမြေငှားရမ်းခများ
(မြန်မာ့သတ္တုတွင်းဥပဒေ ပုဒ်မ ၁၂(ဂ))

တစ်စတုရန်းကီလိုမီတာ အတွက်နှစ်စဉ်ပေးဆောင် ရမည့် ပုံသေ မြေငှားရမ်းခ (ကျပ်)																မှတ်ချက်
စဉ်	ဓာတ်သတ္တုအမျိုးအစား	ရှာဖွေရေး ကာလ		ခမ်းသပ်တိုင်းတာရေး ကာလ						ဖြစ်မြောက်နိုင်စွမ်း လေ့လာမှု ကာလ		ထုတ်လုပ်မှုအတွက် ထူထောင်မှုကာလ			ထုတ်လုပ်မှု ကာလ	
		ပထမ နှစ်	ဒုတိယ နှစ်	ပထမနှစ်	ဒုတိယနှစ်	တတိယ နှစ်	စတုတ္ထ နှစ်	ပဉ္စမနှစ်	ပထမနှစ်	ဒုတိယနှစ်	ပထမနှစ်	ဒုတိယနှစ်	တတိယ နှစ်			
၁။	ဥပဒေပုဒ်မ ၁၈(ဃ)ပါ စက်မှုတွင်းထွက် ကုန်ကြမ်း သို့မဟုတ် ကျောက်အတွက်	၁၂၅၀၀	၂၅၀၀၀	၂၅၀၀၀	၅၀၀၀၀	၁၀၀၀၀၀	၁၅၀၀၀၀	၂၀၀၀၀၀	၂၀၀၀၀၀	၃၀၀၀၀၀	၇၀၀၀၀၀	၈၀၀၀၀၀	၁၀၀၀၀၀၀	၁ နှစ်အတွက် နှစ် ၂၀ အထိ ၁၀၀၀၀၀၀		
၂။	ဥပဒေပုဒ်မ ၁၈ (ဂ) ပါ သတ္တုများအတွက်	၂၅၀၀၀	၅၀၀၀၀	၁၀၀၀၀၀	၁၀၀၀၀၀	၂၀၀၀၀၀	၃၀၀၀၀၀	၄၀၀၀၀၀	၄၀၀၀၀၀	၄၀၀၀၀၀	၉၀၀၀၀၀	၁၀၅၀၀၀၀	၁၂၀၀၀၀၀	၁၅၀၀၀၀၀		
၃။	ဥပဒေပုဒ်မ ၁၈(ခ)ပါအပိုင်းတန် သတ္တုများအတွက်	၃၇၅၀၀	၇၅၀၀၀	၇၅၀၀၀	၁၅၀၀၀၀	၃၀၀၀၀၀	၄၅၀၀၀၀	၆၀၀၀၀၀	၆၀၀၀၀၀	၆၀၀၀၀၀	၁၃၅၀၀၀၀	၁၅၅၀၀၀၀	၁၈၀၀၀၀၀	၂၂၅၀၀၀၀		
၄။	ဥပဒေပုဒ်မ ၁၈(က)ပါ ရွှေ၊ ပလက်တီနီ၊ ယူရေနီယံနှင့် အပိုင်းတန် သတ္တုများ အတွက်	၅၀၀၀၀	၁၀၀၀၀၀	၁၀၀၀၀၀	၂၀၀၀၀၀	၄၀၀၀၀၀	၆၀၀၀၀၀	၈၀၀၀၀၀	၈၀၀၀၀၀	၈၀၀၀၀၀	၁၈၀၀၀၀၀	၂၃၀၀၀၀၀	၂၅၀၀၀၀၀	၃၀၀၀၀၀၀		



“ We must have in our hands that the authority to self determination and soverignity for free management rights over the natural resources that we own ”