



Highlights

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PREFACE

Our home “The Earth” which is the most beautiful plant in our solar system and known for the only place of living organisms according to our acquired knowledge from the science.

Although, humankind especially our ancestors might have experience of the varieties of natural disasters and phenomenon in the past, the acceleration of exploiting natural resources due to industrialization and technology revolution made various environmental impacts at our present moment. Some of them are visible through our eyes. The crystal-clear river water that our ancestors used in the past for their daily basic turned unclean and intoxicated with heavy metals from industrial waste water during our generation.

Humankinds and surrounding ecosystems have been suffering from natural disasters: ozone layer depletion, global warming, sea level rising, as well as man-made environmental problems: air pollution, water pollution, industrial waste water contamination, etc. which may further lead to the excessive amount of chemicals in our food changes. These problems further lead to the health and social problems. Developed countries have been facing those environmental problems whilst developing countries have much higher impacts due to the issues of poverty as the underlying background.

Poverty remains one of the greatest challenges in developing and underdeveloped countries where many are still struggling for the most basic human needs such as food, clean water, sanitation, education and work.

Due to the global demand and continuously increasing of gold price in recent decades, artisanal and small-scale gold mining known as ASGM became the survival for the living of the people living in poverty. An estimated 10-15 million miners, including 4-5 million women and children may directly involve in ASGM sector, another 100 million people to be reliant upon the sector for their livelihoods, where there are varieties of social conflicts and economic issues. Along with those conflicts and issues, it is also the largest global demand for mercury and release the estimated amount of 1400 tons of mercury annually.

The environmental pollution related to ASGM activities have health impacts as miners and people living surrounding areas have suffered from varieties of health issues such as respiratory distress and lung disease from toxic inhalation, and vomiting, headache, fever, chills, abdominal pains and diarrhea from absorption of elemental mercury.

In order to make solutions for those environmental and social problems, we need transdisciplinary approach of research and practice in collaboration and cooperation between scientists and key stakeholders including various societal partners such as governments, companies, and citizen groups, and then we will clarify the solution to solve the problems as well as the sustainable development for the future generations to become well-beings and live in this beautiful world because this is the only known planet where human beings can survive.

Prof. Masayuki Sakakibara
Project Leader
SRIREP Project, RIHN



Discussing with stakeholders

ABOUT SRIREP PROJECT

Among the environmental pollution problems, the mercury (Hg) pollution problem is one of the most serious problems impacting on the ecosystem and human health. Especially, "Minamata disease" that occurred in Kumamoto and Niigata prefectures in the 1950s and 1960s shocked the world. Despite these, Hg has been used in the industry until now for its unique usefulness, and Hg has been released into the atmosphere. To tackle this issue, the United Nation Environment Program (UNEP) concluded a global treaty, "Minamata Convention on Hg (10 October 2013)", which works for the reduction of anthropogenic release of Hg and prevention of Hg pollution on global scale. Recent investigations by UNEP have highlighted the continuing significance of Hg pollution in developing countries and its harmful effects on human health and ecosystems.

One of the main causes of Hg pollution is artisanal and small-scale gold mining (ASGM), where Hg is used in the traditional method of amalgamation to extract gold from the ore rock. Although many countries have ratified the Minamata Convention, mercury emissions are increasing rather than decreasing. This indicates that in practical, this poverty-based global environmental problem cannot be solved with ratification of international treaties and NGO activities alone.



Meeting with miners

OUR PURPOSE

The purpose of our FR is to understand the link between poverty reduction and environmental management and to establish a process for constructing sustainable societies through regional innovations in collaboration with stakeholders in ASGM areas and to strengthen related environmental governance in developing countries. In our FS, we will conduct the following three levels of research based on a transdisciplinary approach, within the scope of Association of Southeast Asian Nations (ASEAN) countries: a) case studies of reductions in Hg pollution using a future scenario in ASGM areas of Indonesia and Myanmar; b) study of regional networks that aim to generate Hg-free societies communities in Indonesia and Myanmar; and c) study of improvements in environmental governance in ASEAN countries.



Creating agriculture plot

Through these studies, we will achieve the regional innovation in collaboration with the stakeholders, and we will clarify the solution to solve the global mercury pollution of global environmental problem. In addition, we will also examine the design, practical use, and evaluation method of the transdisciplinary community of practice (TDCOP), a tool in problem-solving of regional communities, by applying the transformative boundary objects (TBOs) in interaction with stakeholders.

MEETING WITH ECD OFFICIALS

Meeting with officials-in-charge at MONREC-ECD in Nay Pyi Taw

The meeting between officers-in-charge of MONREC-ECD and SRIREP Project members was held at office of ECD, Nay Pyi Taw; the capital of Myanmar, discussed the current process of MOU and MOA between SRIREP project. Although MOU and MOA have not been signed by the two parties: the representatives of MONREC-ECD and RIHN and still in the process, the request of SRIREP Project to conduct the preliminary survey in ASGM area in Mandalay Region, Pyin Oo Lwin District, Thabeikkyin Township during this trip has been approved by MONREC-ECD in terms of in-kind support.

MONREC-ECD supported the preliminary survey of SRIREP Project members by arranging the submission of required documents to the local authorities of Thabeikkyin Township and assigning the ECD staff officers to accompany the SRIREP Project members to survey area.

Furthermore, the future work plan of SRIREP Project has been discussed including the forming research team members for health and environmental impact assessments and the schedule of the survey. The survey for case-studies is tentatively planned to be conducted in 2020, November during the dry season and mild climate, and therefore, an advanced work plan should be placed in accordance with this schedule.

Meeting with Director of ECD in Mandalay

SRIREP Project members traveled from Nay Pyi Taw to Mandalay on February 11th to have a meeting with Dr. Tin Min Maung, Director of ECD, Mandalay Region to discuss the current preliminary survey in ASGM area in Mandalay Region, Pyin Oo Lwin District, Thabeikkyin Township, and future research work plan. Dr. Tin Min Maung also allowed and supported the preliminary survey of SRIREP Project members in ASGM areas of Thabeikkyin Township.



REPORT ON PRELIMINARY STUDY IN MYANMAR

Report on Preliminary Study in Thabeikkyin Township, Mandalay Region, Myanmar

The preliminary study on health and environmental impact assessments of mercury (Hg) pollution in ASGM areas of Thabeikkyin Township, Chaung Gyi Village Tract was conducted by the researchers from RIHN, SRIREP Project; Dr. Win Thiri Kyaw and Dr. Xiaoxu Kuang, accompanied and supported by Staff Officer from ECD: Mr. Pyae Sone Soe, Ms. Nan Myat Pyae Zaw, Ms. Aye Myat Thandar and the Staff Officer from Mandalay-ECD: Ms. Hnin Ei Zaw in February 2020.

Health impact assessment includes general physical examination, respiratory and neurological system examinations, FVC (forced vital capacity) and other parameters of spirometry test and hair sampling for analysis of content of Hg in ASGM miners and community of Thabeikkyin Township, Chaung Gyi Village Tract.

Environmental impact assessment includes the collecting the samples of water and plants of ASGM areas in Thabeikkyin Township, Chaung Gyi Village Tract and house dust samples from the windows of the houses of Mandalay city for the analysis of content of Hg and other heavy metals.

In addition, mining process in the factory of Eternal Group of Companies, Myanmar Golden Point Family Co. Ltd has also been studied.



The person in charge of Eternal Group of Companies, explained the mining process of the factory.



REPORT ON PRELIMINARY STUDY IN MYANMAR



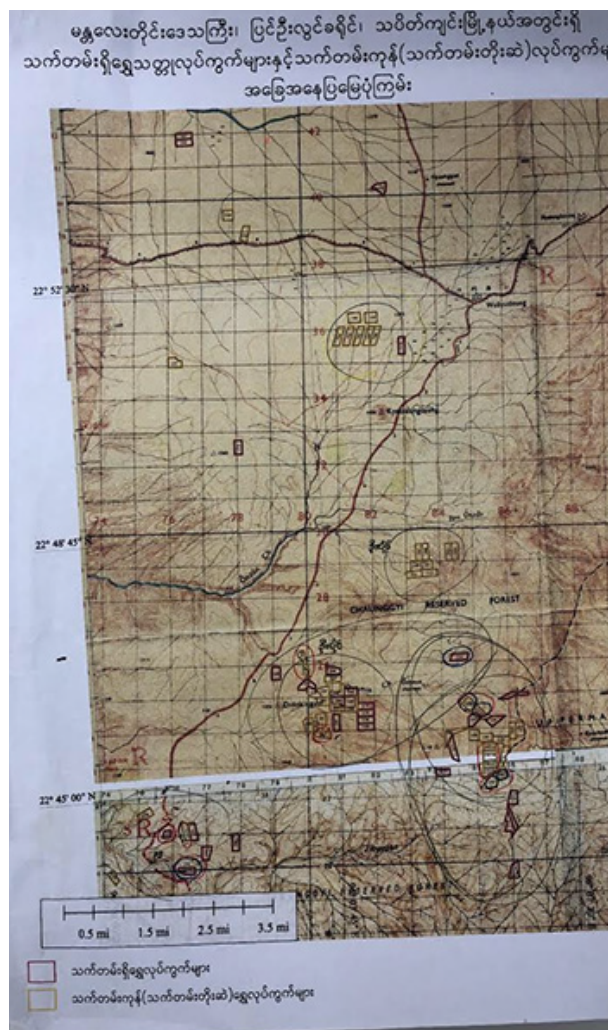
On 13th Feb, a meeting with Mr. Soe Tun, the Assistant General Manager of No. 2 Mining Enterprise has been held in the morning and he led our research team to ASGM mining area and the factory of Eternal Group of Companies, Myanmar Golden Point Family Co. Ltd. Health assessment was conducted on an ASGM miner from Chaung Gyi Village Tract, Zee Phyu Gone Village (local name; Kyee Ninn Thaik Village) and three miners from the factory of Eternal Group of Companies, Myanmar Golden Point Family Co. Ltd. Water and plants samples from ASGM area of Chaung Gyi Village Tract, Zee Phyu Gone Village were collected for the analysis of content of Hg and other heavy metals.



REPORT ON PRELIMINARY STUDY IN MYANMAR



On 14th and 15th Feb, we started our activity by meeting with the manager of head office of Chaung Gyi Village Tract, Mr. U Phoe Sann, concerning with our preliminary study. Mr. U Phoe Sann helped us with the arrangements for visiting to ASGM mining places and miners of Chaung Gyi Village Tract. After that, health assessment was conducted on 31 members of ASGM miners and community of Chaung Gyi Village Tract, Chaung Gyi Village who were gathered at the office of Chaung Gyi Village Tract. Water and plants samples from the stream and ASGM areas of Chaung Gyi Village were also collected for the analysis of Hg and other heavy metals. Even though the majority of the unofficial ASGM mining activity in Thabeikkyin Township has been stopped operating since June, 2019, our research members could study a few members of ASGM activity in Chaung Gyi Village. After conducting the research activity, all research members returned to Mandalay city.



On 16th Feb, researchers of RIHN collected the house dust samples from the window of Mandalay city for the analysis of content of Hg and other heavy metals. The responsible authorities and community of Thabeikkyin Township, Chaung Gyi Village Tract cooperated willingly with our research activity, therefore we did not face the major difficulties.

ACTIVITY PHOTOS



Meetings with ASGM community, studying their activities, and conducting health assessments at the study area.



THE MEETINGS

Meeting with Mr. Bobby, CEO of NAG, Myanmar

The meeting between Professor Masayuki Sakakibara, the project leader of SRIREP project, Research Institute for Humanity and Nature (RIHN) and Mr. Bobby, Chief Executive Officer of Network Activity Group (NAG), Myanmar was held at NAG head office in Yangon, Myanmar on 20th February 2020 and discussed future collaboration for SRIREP project.



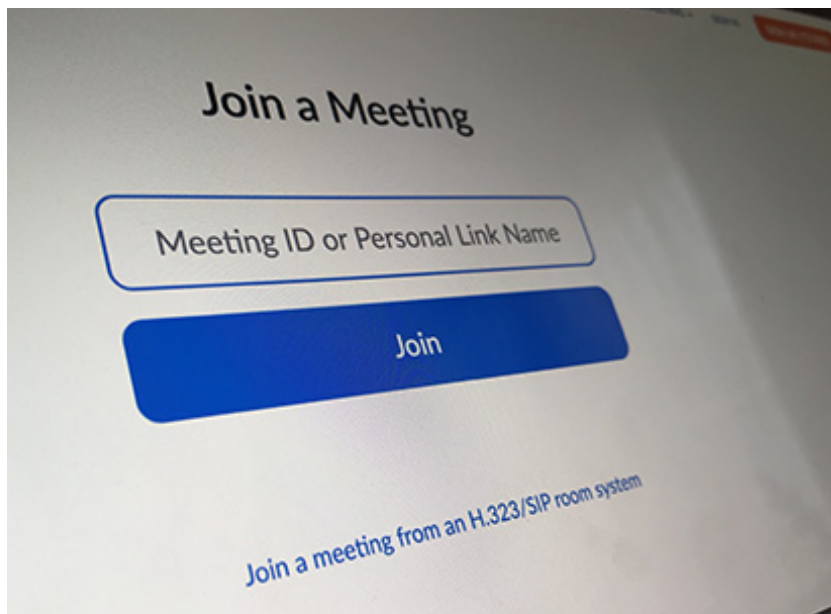
Meeting with Dr. Thaung Han, Group CEO of Max Myanmar Group at Max Myanmar's head office

Professor Masayuki Sakakibara, the project leader of SRIREP project, Research Institute for Humanity and Nature met with Dr. Thaung Han, Group CEO of Max Myanmar Group at Max Myanmar's head office in Dagon township, Yangon, Myanmar on 21st February 2020 and discussed future collaboration. Dr. Thaung Han, Group CEO expressed his interest and willingness to take part as a key stakeholder on SRIREP project activities.



Expanded Core Member Meeting Held

Members of SRIREP Project took part in Expanded Core Member Meeting at Zoom on May 19, 2020. Members discussed 1) SRIREP Project PR/FR1 Summary Report, 2) Comments on FY2018 project PR, 3) Research activities of SRIREP Project and, 4) Rield reports of every member of SRIREP Project during 2019-2020 in Indonesia and Myanmar.



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Win Thiri KYAW

Project Researcher of SRIREP project, RIHN

Win Thiri Kyaw attained the bachelor degree of medicine (M.B.B.S) from University of Medicine 2, Yangon, Myanmar in 2007. Then, she completed her 5 years journey of Ph.D. in Medical Science, Neurology and Clinical Pharmacology from Ehime University, Graduate School of Medicine, Japan in 2013. Since then, she had conducted her post-doc studies for the clinical research and basic research related to neurological disease especially Parkinson's Disease and other movement disorders at Neurology and Clinical Pharmacology department in Ehime Medical University until 2017. Since 2019 until present, she has been working at SRIREP Project, mainly for the environmental and health impact assessments of Artisanal and Small-scale Gold Mining (ASGM) activities in Mandalay Region, Myanmar. Her interest in the studies of neurological symptoms related mercury intoxication and promoting the health of ASGM community drive her to deal with key stakeholders, and face challenges of the reduction of environmental problems, as well as promote health awareness in her country.