Mann Field Granted with an Environmental Compliance Certificate (ECC)

HSE Team

1. What were the reasons that MPRL E&P applied for an ECC for Mann Field?

MPRL E&P Pte Ltd., is an independent foreign registered oil and gas exploration and production company led by Myanmar nationals operating in Mann Field under a Performance Compensation Contract (PCC). Under the PCC, MPRL E&P is re-vitalizing the field with new technologies and methods to enhance production and improve the environmental performance of the oil field operations. In this connection, MPRL E&P has commissioned Environmental Resources Management (ERM), supported by local specialists Resource and Environment Myanmar (REM), to undertake an Environmental Impact Assessment (EIA) in order to develop an Environmental Management System (EMS) for the Project which will cover a programme of re-development and enhanced oil recovery (EOR) to ensure the sustainability of Mann Field in accordance with the Environmental Impact Assessment (EIA) Procedures. The overall purpose of the Study is to complete a robust EIA to meet the requirements of the EIA Procedures for the EIA to be approved by the Ministry of Natural Resources and Environmental Conservation (MONREC).

The EIA Procedure for Myanmar was promulgated on 29th December 2015. The procedures were prepared by the MONREC, formerly called the Ministry of Environmental Conservation and Forestry (MOECAF), along with the support of an EIA Review Team Committee comprising of members of relevant union ministries, the union attorney general’s office, three city development committees and Non-governmental Organizations (NGOs) with technical support by experts from the Asian Development Bank Greater Mekong Region-Environment Operations Centre (ADB GMS-EOC).

Under the EIA Procedure, there is a requirement for the undertaking of an IEE or an EIA in order to obtain an...
Your Opinion: How Important is the CARE Card System for a Safety Culture at the Company?

Myo Htet Thu
Sr. Material & Logistics Assistant
Material & Logistics Department

Since 2007, I have worked in the Material & Logistics Department as a Sr. Material & Logistics Assistant. The HSE Department initiated the CARE Card System years ago in order to promote a workplace safety culture across the entire organization, raise awareness on HSE policies, implement preventive measures for safety and security, identify any opportunities to correct or reinforce the existing HSE standards and practices with the participation of the employees themselves. Using a CARE Card, an employee can report both safe and unsafe conditions and acts with regard to the environment, equipment, machinery tools, public health and welfare.

The CARE Card System is a very efficient one because all the employees, HSE Department and other responsible personnel are streamlined in the process which ensures necessary corrections or improvements are made following submission of CARE Cards. Every three months, quality CARE Cards are selected for awards. As ‘Safety First’ being the company’s top priority, Lost Time Accidents (LTAs) targets are set every year to encourage employees to follow safety rules and get rewarded.

It is important that we keep practicing safety through the CARE Card System as it is a valuable tool that enables us to prevent harm and injuries early, to detect gaps and address them properly, and to protect the environment and community.

Ei Ei Maung Maung
Executive Office Assistant
Government & Public Affairs Department

I believe that the CARE Card System is a good system that ensures a safe and healthy workplace which is a fundamental right for all of us.

Every employee can submit a CARE Card. First of all, one should identify good practices and good conditions with regard to safety. By reporting them through a CARE Card, they can help reinforce these practices and working arrangements so that everyone can stay safe. In addition, they can point out any unsafe practices and conditions objectively and provide suggestions for improvement that will benefit many others.

By having the CARE Card System in our workplace, both the company and employees can save lives and properties. Employees are empowered to be their own safety guards and work in a workplace that is out of harm’s way.

I have submitted a few CARE Cards based on my awareness on the safety matters in the workplace and in 2018 I was awarded the second prize in the quality CARE Card selection process. I was even happier to learn that my CARE Card was a useful card to promote driving safety when I received a prize. I believe the awarding practice is a good practice to recognize excellence in safety awareness while also inspiring other employees to write a good CARE Card too.
Capacity Building for Career Engineers

Moe Thu Zar Soe

In this workshop, he explained the fundamental concepts of oil displacement by water and provided techniques for estimating recovery, evaluating behavior and monitoring performance of waterflood projects. Beside the discussion points and learning outcomes are the principles of immiscible fluid displacement in porous media, identifying the physics behind waterflood oil recovery methods, the benefits and limitations of different well patterns on waterflood performance, the technologies for the treatment of injection and produced water and related issues with potential formation damage and surface processing facilities, calculating overall displacement efficiency, applying mathematical models for the operational design of waterflood processes, explaining design considerations of a waterflood process, the approaches for monitoring and surveillance of waterflood and the methods for optimization and improvement of waterflood performance.

Actual field cases for optimum application were explained with case studies and in-class exercises. In general, the course is adding knowledge for fresh graduates and refreshing knowledge for experienced personnel since the course is interactive and comprehensive. The participants were (26) engineers and geoscientists from MPRL E&P Pte Ltd. and Myanmar Oil and Gas Enterprise.

On the final day, the participants discussed by presenting results data and graphs about the historical waterflood project of Mann Field and current ideology of the pilot waterflood project. The lecturer concluded and agreed with the concept since the team has only limited core data on the complexity of the geology structure of the Field. He left his contact and availability for participants who would like to further ask for suggestions and assistance.

Partaking in HR Festival Asia 2019 by MPRL E&P

Thae Aei Khinn Zaw

On 8th and 9th May, 2019, two HR representatives, K Than Syn and Htoo Szuon Lin from MPRL E&P attended the HR Festival Asia 2019 in Singapore, which was organized by Human Resources Management Asia (Singapore). The HR Festival Asia 2019 welcomed over 5,000 Management professionals including HR and HR Tech professionals with the provision of some of the world’s most prominent speakers, thought-leaders, visionaries and leading service providers in one place to spotlight the convergence of HR, technology and the new world of work.

The main objectives of the HR Festival Asia was to offer HR and management professionals a unique opportunity to learn about and understand the complete HR tech offerings available today, through a one-stop comprehensive platform.

Two representatives from HR Department gained valuable lessons and knowledge on HR automation systems, the importance of positive and empathetic mind-set for success of the organization and the vital role of continuous learning culture for all employees to stay on the trend from the outside world and adapt to it, especially to the technology.

During the HR Festival Asia, the five main-streams of HR & Digital Transformation, Talent Management and Development, Smart Workforce and Innovation, Recruitment and Engagement and HR Tech were presented to HR professionals as well as the opportunity to network with HR innovators and like-minded peers, understand the megatrends and current shifts in the industry, to take a sneak peek into the future of work, and finally to showcase some of the region’s most innovative HR and Tech solutions.
Engaging with Stakeholders: Quarterly and Bi-annual CSR Review Meetings

Thae Ael Khinn Zaw

The continuous stakeholder engagement regarding CSR initiatives helps build robust relationships, which plays a vital role enhancing and smoothing the path that leads to successful business operations as well as business reputation. Some may be reluctant to talk about their CSR initiatives to respective stakeholders because they think good work should speak for themselves. This thinking can lead a company to make their efforts less visible and miss important opportunities to optimize the benefits generated by CSR.

CSR and Communications Department of MPRL E&P regularly engages with stakeholders from Myanna Oil and Gas Enterprise (MOGE) as well as local communities in Mann Field to keep them updated of the quarterly and bi-annual CSR Progress. In the months of April and May, there were three stakeholder engagement meetings with MOGE Nay Pyi Taw, MOGE Mann and local communities.

At the 2nd bi-annual CSR Progress Update Meeting held in Nay Pyi Taw, the officials from the Administration and Finance Departments of MOGE attended the meeting. At the meetings with MOGE (Mann) and local communities, there were attendees of Ngayway Region Illutaw representatives, Mann Oil Field General Manager (MOGE), Deputy Director from Minbu District Administration, Township Administrator; township departmental officials and other invited guests.

During the meetings, the representatives from CSR and Communications Department of MPRL E&P presented the CSR Initiatives that were implemented during the Fiscal Year 2018-2019 and explained the CSR Work Programs for Fiscal Year 2019-2020 to respective stakeholders.

Our Community: Chin Taung Village

Zin Mar Myint, CI Field Coordinator

Chin Taung is one of the fourteen surrounding communities in Mann Field. A number of community investment initiatives have been implemented in Chin Taung since 2014. They include a drinking water storage tank, a water filtration unit, school furniture, vocational education and disaster management contributions, amounting to more than MMK 60 lakhs. The beneficiaries are school children, women's groups, youth and farming households.

I am Nay Zaw. I work as a community volunteer representing my village Chin Taung for implementation of CSR initiatives by MPRL E&P in Mann Field. I am a graduate in Chemistry and now my main business is mushroom planting. I became a community volunteer after volunteering at the community library. I coordinate with the CSR Team from MPRL E&P and local government departments to carry out vocational trainings and awareness sessions on GAP (Good Agricultural Practices) for the farming communities in Mann Field. I believe my role enables me to contribute to the betterment of my community and at the same time, it allows me to extend my network and experiences.

Community development is very important. When people’s income and knowledge increases, the damage to the environment is lessened. We must work towards lifting people out of poverty for the long term in order to reduce the burden and damage to the environment and its natural resources. MPRL E&P’s CSR initiatives help boost local people’s income and knowledge on environmental conservation.
ECC for certain development projects. This process is elaborated further in Section 3 of EIA procedures, along with a complete list of laws related to environmental and social issues and hence relevant to the EIA Study for the proposed Project.

Therefore, as per law and regulatory requirements, MPRL E&P followed the Environmental Conservation Law (2012) and EIA Procedure (2015). This certificate ensures that our company complies with all requirements within the environmental and social impact Assessment (ESIA) Report.

2. Who issued the ECC and what were the requirements to be eligible for it?

The Ministry of Natural Resources and Environmental Conservation (MONREC) will issue the Environmental Compliance Certificate (ECC), according to the submission of the ESIA report approved Environmental Conservation Department (ECD).

The ECC is a document having legal effect, through which the Ministry approves an Initial Environmental Examination (IEE) Report, an Environmental and Impact Assessment Report, or an Environmental Management Plan (EMP). Issued by the MONREC's minister's office, the approval is in a letter format and confirms that an EIA is in compliance with the requirements of the Law on Environmental Conservation (LEC).

The ECC is effectively an environmental and social licence to operate and comes with conditions that oblige production and enhances the development project to mitigate and monitor the adverse impacts of our operations activities in accordance with the principle of sustainable and socially responsible development.

3. What exactly is an ECC?

ECC is an Environmental Compliance Certificate.

One should automatically know what an Environmental Compliance Certificate is, and if one did not already know about environmental compliance, one should start finding out immediately. It sounds complicated but it is not. In fact, it is nothing more or less than what one should be doing already, to be running your company completely legally.

Environmental compliance means conforming to environmental laws and standards. This has become a bigger and bigger concern in recent years, and will only get bigger as environmental concerns grow. The number and the stringency of environmental standards has increased recently, which means that corporate entities have to be more cautious than ever and lessen their environmental impact more than they ever have in the past. These laws and standards are meant to reflect the concern that exists in the community, and our collective priorities. Laws are supposed to be the solidification of consensus. They are meant to reflect our beliefs and values. We need to define the ways in which we interact with each other, and laws are our way of doing that.

Environment law reflects a belief that we all live together on earth and therefore no one should damage or pollute the earth any more than anyone else, and that everyone should keep that damage to an absolute minimum.

The ECC is a legal document issued by the MONREC which approves an EIA report. It contains specific measures and conditions that must be met by the project proponent before and during the operations stage of the project. It certifies that the proponent has complied with the requirements of the EIA system and that the proposed project will not cause a significant negative impact on the environment. It also certifies that the proponent is committed to implementing its approved Environmental Management Plan. Requirements for the ECC application depend on the type of project being developed and the location of it. A third-party will manage the studies and prepare the documents for the ECC application and will communicate with MONREC until the release of the ECC.

The certificate is valid for a period of five years from the date of issuance, and may be renewed in increments of five years, subject to amendments.

The ECC, which was issued on the Mann Field project guided by the ECD, has an exact number of ongoing conditions the investors need to respect, as well as certain monitoring and reporting requirements. Upon receiving the ECC, MPRL E&P should begin the project implementation process in accordance with the conditions attached to the ECC, including the EMP within the time frame set out by the ministry.

4. How important is an ECC to resource extraction projects/the oil and gas industry?

The ECC is effectively an environmental and social certificate to operate and comes with conditions that require the project developers to mitigate and monitor the adverse impacts of their project activities in accordance with the principles of sustainable and socially responsible development for the oil and gas industry. All developers must follow international standards, as well as standards set by the IFC, the World Bank, API and EPA.

5. How many businesses in Myanmar have received an ECC?

The following table mentions a number of onshore and offshore oil and gas fields that have received an ECC:

<table>
<thead>
<tr>
<th>No</th>
<th>Company</th>
<th>Oil &amp; Gas Industry</th>
<th>Onshore</th>
<th>Offshore</th>
<th>ECD Issue date</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Ophir Myanmar Ltd.</td>
<td>Woodside Energy Myanmar Co., Ltd.</td>
<td>Block AD-3</td>
<td>Block AD-7</td>
<td>18.12.2018</td>
</tr>
<tr>
<td>2</td>
<td>Woodside Energy Myanmar Co., Ltd.</td>
<td>Block AD-3</td>
<td>Block AD-7</td>
<td>20.2.2018</td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>MPRL E&amp;P Pte Ltd.</td>
<td>Pacific Hunt Energy (Seismic Survey)</td>
<td>Block A-6</td>
<td>Block C-1</td>
<td>3.8.2018</td>
</tr>
<tr>
<td>4</td>
<td>POSCO Daewoo</td>
<td>MOGEF/2 Mann Field</td>
<td>Block A-1</td>
<td>Block C-1</td>
<td>1.9.2019</td>
</tr>
<tr>
<td>5</td>
<td>MPRL E&amp;P Pte Ltd.</td>
<td>Woodside Energy Myanmar Co., Ltd.</td>
<td>Block A-7</td>
<td>Block C-1</td>
<td>26.3.2019</td>
</tr>
<tr>
<td>7</td>
<td>Woodside Energy Myanmar Co., Ltd.</td>
<td>Block A-7</td>
<td>Block C-1</td>
<td>30.4.2019</td>
<td></td>
</tr>
<tr>
<td>8</td>
<td>Berlanga Myanmar Pte Ltd.</td>
<td>Block M-8</td>
<td>Block A-1</td>
<td>3.5.2019</td>
<td></td>
</tr>
<tr>
<td>9</td>
<td>Woodside Energy Myanmar Co., Ltd.</td>
<td>Block A-1</td>
<td>Block C-1</td>
<td>3.5.2019</td>
<td></td>
</tr>
</tbody>
</table>

6. Some say a public online database of EIAs should be established in order to better inform the public and hold the companies accountable. What's your opinion on this?

The public has no online database access to environment-related documents which are in the hands of the Environmental Conservation Department (ECD) under MONREC. Most of the EIA, JEE and EMP reports submitted to the ECD are not available online, despite it being a legal requirement in the country's EIA Procedure.

7. What will happen after obtaining the ECC from MONREC for MPRL E&P?

Receiving the ECC for our Mann Field project is concrete proof of our commitment to being a responsible and professional investor in Mann Field and it is worth noting here that Mann Field is the first ever onshore oil field in Myanmar to undergo such stringent environmental procedures in an effort to comply with the law at the initiative of MPRL E&P. It will reinforce all the initiatives we have already carried out in environmental and social management areas at the field level and contribute to MPRL E&P's desire to promote and practice transparency.

MPRL E&P will continue conducting its responsible business practices related to managing environmental and social impact and creating shared value for the host community in Mann Field in line with all applicable laws, regulations and principles as a leading oil and gas company in Myanmar.

8. Do you have any comments that you would like to share here?

Whoever operates the projects and/or project developers in Myanmar need to respect and follow the Environmental Conservation Laws, and the rules & regulations set by the Myanmar Government.

Regarded as an environmental and social license to operate, the ECC requires every project developer to effectively reduce and monitor the potential impacts of their operations activities in accordance with the values and standards of socially responsible and environmentally sustainable development. In this regard, every organization needs to be aware of and comply with the national legislation, rules, regulations and industry best practices, to prevent environmental pollution, to further develop the 3Rs (Reduce, Reuse, Repurpose & Recycle), and to share all information & environmental performance, and lastly to create a safer environment for the community where one operates.
The Face of Petroleum Engineering

Thal Sandy Tun

From classroom to office desk, Toe Akari Hlaing navigates her journey as a young female petroleum engineer.

Since her childhood, Toe Akari Hlaing, aka Toe, always gets excited at the idea of becoming an engineer, although not necessarily about entering the oil and gas industry which is associated with dangerous rigs and infamous for being less receptive of women engineers. Anyhow, she ends up graduating with a Bachelor of Petroleum Engineering from the Yangon Technological University (YTU) in 2018 and is determined to become a professional petroleum engineer.

During her six-year voyage at the university, she had many hitches but few friends of the same gender, because there were only six female students in her batch of Petroleum Engineering Class at YTU, which is hailed as one of the best universities in the country for students like Toe who passed her Matriculation Examination with distinctions in all subjects. When she was a second year student, she had a chance to have a two-week internship at Mann Field where she studied tools and equipment used in the oil and gas operations as well as life in the petroleum field. She recalled how the field experience helped her learn her lessons easily once back in class.

"Through this practical experience in the field, I was able to assimilate and understand all the theories and practice of petroleum engineering which I started studying in my third year. In the third year, I also got another internship at the Yangon Office of MPRL E&P. It was basically an office job under the supervision of the then Technical Manager, Mr. Daniel Chia."

The internships at MPRL E&P became more advanced and challenging as her academic years progressed. In the fifth year, Toe was involved in a multidisciplinary project to fulfill her academic requirements.

"We had to choose our own topics and work together to complete the whole project from selecting potential areas to drill a well, to producing and transporting oil to storage tanks, through a multi-disciplinary team approach. MPRL E&P provided the required field data and information to us. We only had three months to complete the whole project that included writing a report and making a presentation. With the support of the company’s seasoned engineers we sailed through it successfully."

As a variation, Toe also took up a nine-month internship at Total E&P Myanmar where she embraced an opportunity to get intimate with the natural gas fields and their operations. She has observed that the oil industry and the gas industry are quite different in terms of aspects such as tools and equipment used and working principles.

Whenever she has to make an important decision including choosing her first career upon graduation, Toe turns to her family which includes her parents and a brother, who are always appreciative and supportive of every effort and achievement she has made up to now.

"I always wanted to work at MPRL E&P since I was an intern there. I was able to build a good relationship with almost all the people in the technical functions during my internship, and I found the working culture that includes working environment, company goals, ethics and values, very dynamic with both a team-based approach and excellent management style. So I applied for a Junior Engineer position at the Reservoir Engineering Department following the encouragement of my family, and landed on my first career in December 2018 at the age of 22."

In the Reservoir Engineering team, Toe found herself to be the only girl. However, with the succor of her team members and increased promotion of diversity in the workplaces across the country, she aims to spread the message that the oil and gas industry is very conducive to everyone including women engineers with stringent health and safety standards while proving to herself that women are equally intelligent and capable of jobs in science, technology and engineering, to men or even better.
"All the seniors in my department are men. This makes me even more aware of the oil and gas industry being less diverse. However, I believe the field of engineering is not based on if someone is a man or woman. Rather it is based on if they can make it. Our society has different expectations for men and women. While men are not required to stay home and take care of the family all the time, women are. So women are not supposed to be well-suited to field-based jobs in the petroleum industry. However, that has to be changed," said Toe in a confident tone.

As a Junior Engineer, she carries out reservoir studies and reservoir engineering functions such as decline curve analysis, waterflooding analysis and other research. She assists her manager, senior engineers and assistant engineers in her department with updating the database, monitoring daily production rates and productivity performance of individual wells, and appraising proven remaining reserves in Mann Field. She also has been assigned to be part of the Block A-6 Project Development Team.

Toe believes energy development should go hand in hand with sound environmental management and social progress.

"Energy industries are really important because they have enormous impact on all aspects of our life. We use energy to light our home and cook our lunch, to commute to work and school, to produce goods and run our economy. Currently, energy demand is growing in the country. In this regard, the government and private sector should keep working together to optimize current field productions, to develop new fields and to explore more prospects. At the same time, environmental impacts like greenhouse gas emissions due to hydrocarbon extraction, refining, transporting and consumption needs to be curbed with the use of technologies and market mechanisms. In addition, social impact management is important to ensure community support and creation of shared value."

She also insists that technologies are key to developing the country which is rich in natural resources. That is one reason why she decided to study a subject which attracts few women.

"By learning the tools and techniques of the petroleum engineering field we are able to estimate how much hydrocarbon resources the country has and study how much of it can be economically recoverable. As a petroleum engineer, the most exciting aspect of my job is that new challenges pop up every day and I have realized that I should never stop learning!"

Although currently confined to an office environment, Toe imagines a time when she moves to the field and gains more experience. She pictures herself as a successful petroleum engineer working in one of the most important roles for the development of the country within five or ten years from now.

"I felt inspired to become an outstanding female petroleum engineer after watching the video clip of an interview program with our CEO, namely, 'Passing the Leadership Baton.' He mentioned that the company gives equal employment opportunities for both men and women. According to my own experience, that is right and the company recruits its employees based on their skills and experience, not on their gender. So I would like to encourage other female petroleum engineers to pursue their dreams as well."
University of Magway in 2006 and I got my B.Sc. (Hons) four years later. As I was qualified to attend the M.Sc., I continued my studies while working at MPRL E&P. After completing my master’s in 2012 I was again qualified to proceed to M.Res. I have no other work experience and this is my very first job.

Would you like to talk a little bit about your familial background?

I live in Minbu and would like to call it my native town. Including me, there are six people in my family—my parents, an elder sister, a younger sister and brother. My family members are friendly and caring.

My father is U Win Maung who retired from the Myanmar Oil & Gas Enterprise (MOGE) in 2012. My mother is Daw Aye Win who is a good housewife that makes sure that we are intelligent and educated.

My elder sister is Myat Thanlar who has a bachelor’s degree in Myanmar from the University of Magway. She currently works in the Engineering Department. My younger brother is Myo Min Khine and he graduated in Geography in 2016 from the University of Magway. Now, he is working as a boiler man in MOGE and he aims to become an office staff in the future. My little sister is Yin Min Htwe who is now in her fourth year in Geology at the University of Magway. She aims to be qualified for the M.Sc. (Geology).

What do you think of the CSR programs being implemented in Mann Field?

I believe our CSR programs in Mann Field are essential for the effectiveness and efficiencies of our production operations and they create value for the communities living near our project. There is a very good program of providing vocational trainings for the communities which facilitate their livelihood development. In turn, we earn an image that we are a responsible business. I also am involved in the CSR programs such as land acquisition and compensation processes for new wells or existing ones. In such matters we need to coordinate with MOGE CSR Representatives as well. In addition to participating in these programs, my colleagues and I have established our own donation group called ‘Myittaryayunghi Saytarsin’ to support underprivileged students in the communities.

What kind of challenges do you have in your job? How do you overcome them?

Everybody has their own challenges in their jobs. For me, I have encountered two major challenges in my job. First, Mann Field has been producing oil since 1970 and therefore reservoir pressures have declined. We have reviewed workover, deepening, new well and perforation activities to offset the decline but have not yet succeeded in reaching the production targets. By making a detailed analysis and thinking about all the aspects, we have to overcome the challenge. Secondly, we have difficulty negotiating with farmers who own the land where a new well is drilled or where deepening or perforation operations are conducted. With the co-ordination of the CSR team and MOGE authori-
ties, we work out the solutions together.

How do you spend your free time? What are your hobbies?

I usually spend my free time together with my wife, sometimes with my family. As a routine, I work 28 consecutive days in Mann Field and take 14 consecutive days off. During these two weeks, I accompany my wife to the market as she buys vegetables, fruits and meals to turn them into my favourite meals. I also help her in the kitchen. When I am enjoying the meat she cooks, she is all smiles. Sometime, we dine out together. When I have a plan to travel during days off, I bring along my family to pagodas or other famous places. Me and my wife visit pagodas every break.

Everybody has a hobby and mine is watching detective movies, thriller movies, revenge movies.
Presentation of Internship students from Yangon Technological University to Senior Management of MPRL E&P

CEO Briefs Petroleum Engineering Internship Students from Yangon Technological University
A company doing business with responsibility and integrity can gain a positive image anywhere they are established or may appear publicly. When it comes to the presence of a company in a community, we cannot avoid discussing how the company should effectively engage with the community in an effort to ensure trust and local support of its operations.

All sustainable businesses make early attempts on developing and initiating a stakeholder engagement plan that creates value for stakeholders as well as evaluates business goals, strategies and operations. Stakeholder engagement is a process which ensures collaboration and consultation with stakeholders who have an influence on the project or are affected by the project for the positive outcome of the project. Therefore, successful completion of a company’s projects absolutely depends on how the company builds a relationship with their stakeholders.

Relationship building with the community which is identified as a key stakeholder group for extractive companies cannot be accomplished in just one sitting. The main objective of the relationship building exercise which involves a dialogue and multiple meetings is to ensure communities accept that there are more potential benefits than risks from the project and they can communicate their concerns and needs directly to the company which will take care of them in response.

In this regard, the company needs to proactively study community insights, grievances and expectations through regular assessments and consultation processes in order to understand community perceptions and attitudes towards the company’s activities. Moreover, it is important that the company analyzes and manages their expectations carefully so that community involvement, buy-in and ownership with regard to implementation of long term solutions for incremental improvements of social and economic life can be effectively created.

Throughout these stakeholder engagement processes, the company can seize an opportunity to express how they intend to reduce negative impacts and increase the positive ones of the project for the community. At the same time it can support local development through a shared vision, for example, by starting as a philanthropic activity and then moving towards a strategic partnership.

Being a responsible and long term investor in Myanmar, MPRL E&P has developed a set of responsible and integrated practices in its corporate social responsibility program in Mann Field. The company has set up a group of CSR field representatives who conduct regular surveys and consultations, analyzes data and feedback, and reports progress updates.

Whether it is about the Operational Grievance Mechanism or the community livelihood development program, the Community Volunteer are a cornerstone of MPRL E&P’s CSR Program in Mann Field. Serving as a focal point of community communications on concerns, needs, and feedback between the community and company, the Community Volunteers pave the way for a win-win situation between the two parties. The CSR field representatives and Community Volunteers work together for implementation of several short term, medium term and long term community investment initiatives through a strategic partnership among the community, MOGE and the company.

Can you explain the status of Mann Field from your perspective as a field geoscientist? Are there any insights you would like to share?

Mann Field is one of the most productive oil and gas fields in Myanmar. However, today, about one third of in-place hydrocarbons from the reservoir sands has been extracted in Mann Field. It means that it has produced almost all of the recoverable hydrocarbon volumes and thus, in technical terms, it has become a depleted field and advanced production methods are needed to enhance its further production. Regarding this, the technical team is identifying some of the favourable methods such as water flooding. Also our Subsurface team is studying potential hydrocarbon resources from deeper target sands from an exploration point of view. It is another potential way to boost up the field production. Currently, I am involved in the water flooding project by reviewing the injector wells and monitoring functions.

What is your observation of the growth plan of the company regarding Mann Field?

Currently, the technical teams are considering from two aspects. Firstly, the team is endeavouring to increase the production from existing reservoir sands which includes the water flooding project. This project I think is very conducive to the Mann Field Enhanced Oil Recovery Project because of the ability to help with the reservoir pressure maintenance and also for zero discharge as the produced water is re-injected into the reservoirs. Production will increase in offset wells near the injector wells. Another production method, GreenZyme treatment operations, have also been found successful in Mann Field. In this fiscal year, we have planned the water flooding and continued GreenZyme treatment operations. Secondly, subsurface teams are studying the exploration potential in the northern part of Mann Field in order to find new reservoirs. Now, we are evaluating the hydrocarbon reserves and economic viability based on subsurface data.
Expanding Livelihood Development of Local Youth: Educational Partnership with No. (5) Industrial Training Centre, Magway

Thal Sandy Tun

Community livelihood development is one of our key focus areas, and since the beginning of the fiscal year 2018-2019, the CSR team has conducted follow-up activities with vocational trainees while continuing to promote the employability and skill development of youth from the communities through cooperation with relevant stakeholders from local and regional levels.

As a step forward in our vocational skill training program, three male students from the surrounding communities in Mann Field have been accepted and enrolled at the No. (5) Industrial Training Centre in Magway with the support of MPRL E&P. Daw Zin Mar Myint, CI Field Coordinator, explained about the launching of the educational partnership with No. (5) Industrial Training Centre Magway this fiscal year 2019-2020 as a new CSR initiative for youth in Mann Field.

"After we mapped out the possibility of this initiative, we made an announcement to the communities in Mann Field that we would be accepting applications from the community members who have passed their Matriculation Examinations with the recommendations of our Community Volunteers and Village Administrators to attend this training program with the financial support of MPRL E&P. After thoroughly checking the 7 applications we received, we forwarded them to the Head of No. (5) Industrial Training Centre Magway to go through their selection process which was very competitive: only 170 out of more than 600 applicants would be accepted. Fortunately, up to 3 applications from us were green lighted and enrolled successfully."

The training period is 11 months and MPRL E&P has provided enrollment fees and monthly stipends to ensure that the 3 students are able to make the best of their studies without financial burden.

---

MPRL E&P Group of Companies Participated as a Premium Sponsor at the Myanmar Job Expo at Novotel Clarke Quay in Singapore
Monsoon Health Tips: Five Ways to Stay Safe And Healthy During Rainy Season

Monsoon brings with it a host of infections, especially water-borne and mosquito-borne diseases. Here are a few tips to help you stay healthy throughout the rainy season.

While the cool splash of monsoon rain brings much relief from the scorching heat, it brings with it a host of infections, especially water-borne and mosquito-borne diseases. In addition, high humidity can adversely affect your health.

So, you need to be really careful during the rainy season with regards to the food habits or activities you perform. Monsoon can trigger certain health risks, and children, in particular, are susceptible.

Fortunately, there are many precautions you and your whole family can take to avoid getting sick and stay in peak health condition during the rainy season. Here are a few tips to help you stay healthy throughout the monsoon:

- Avoid eating street food, this is the season you should avoid eating foods from roadside stalls. This is important because bacteria breeds insanely during the rainy season, thereby increasing your risk of having unhygienic foods that may cause stomach infections. Moreover, it’s not safe to consume water from outside during this time of the year.

- Increase your immunity by eating a nutritious diet. Eat fresh and home-cooked meals only. Try to stay away from pre-cooked food, raw fruits and veggies should be washed thoroughly before eating them. Avoid oily foods that can disrupt digestion and cause digestive issues.

- Drink plenty of fluids and warm herbal teas, especially those with anti-bacterial and anti-inflammatory properties to boost your immunity. It is important to drink enough water during monsoon, but make sure that you consume boiled or purified water only.

- Use insect repellents that are safe for the skin to avoid getting mosquito bites. Keep your surroundings clean, ensuring that drains and sewage lines are not clogged. Check through flower pots and unused containers that may be holding stagnant water, where mosquito breeding is common. Clean them regularly and keep them covered.

- Practice good personal hygiene such as washing hands frequently with soap and clean water to avoid infections. Keeping your hands clean will help eliminate most monsoon-related illnesses. Also, avoid touching your eyes, nose and mouth without washing your hands properly as you may end up transferring germs to yourself.

Keeping this in mind, we hope you’ll have a safe, healthy monsoon!

Source: https://medium.com/@AmritbanaHCMonsoon-health-tips-five-ways-to-stay-safe-and-healthy-during-rainy-season-ba2a2c850e17

Vaccination Program for Seasonal Flu
What are deeper reservoirs of Mann Field and why do we consider exploring them?

Mann Field, located in central Myanmar, was discovered in 1970 and reached peak production of 24,000 bpd in 1979. There are currently 670 wells in the field, of which over 300 are producing and the rest are shut-in. The field is now producing less than 1200 bpd from shallow reservoirs and the production rate is gradually decreasing because of reservoir pressure depletion. There are many challenges and difficulties to drill new infill wells and deepening wells due to the reasons of mechanical limitation (fish, deformed casing, and surface condition), out of rig capacity, and low priority and high risk under geological evaluation (low Hydrocarbon saturation, high Gas-Oil ratio, and near oil-water contact). Moreover, deepening and infill wells drilled in last year were partially successful to meet the expected production target.

To sustain the field decline, there are several methods to be implemented and one of the possible ways is exploration. Mann deep exploration is triggered since 2006 with deep test wells with MPRL E&P contracting time. However, there were a lot of challenges at drilling operations where severe overpressure was encountered at deeper horizons. MPRL E&P is still trying to overcome this drilling challenge to test Hydrocarbon in deeper sand in Mann Field.

The deeper reservoirs are lower Padaung and Shwezetaw reservoirs. The lower Padaung Sands are commercially proven as oil bearing and when discovered initially was with the commercial amount. The Shwezetaw reservoirs are economically proven in the fields (Letpanta, Thar Gyi Taung, Sabe and Yenangya) producing hydrocarbon in approximately 120 km apart from Mann Field but unproven yet in Mann Field. Therefore, the technical team focused on further exploration of deeper reservoirs in order to boost up field production.

Explain about the feasibility study done and techniques that can be used in the exploration work. Also tell us a little bit about the subsurface team as well as your role.

G&G team functions (Exploration & Development) to find hydrocarbon at new venture areas and develop the project at discovered fields. Geologist and Geophysicist are two major functional roles in the G&G team. They are working with well logs, seismic and outcrop geology data.

To evaluate the deeper Shwezetaw reservoirs' potential and to identify the possible risks associated with reservoir rock quality in the Mann area, field work was firstly carried out to investigate surface geology in the Salin basin integrated with regional subsurface data (wells log correlation) to understand the reservoir quality and distribution of the Shwezetaw formation and then the outcrop samples collected from the field were sent to the laboratory for petrographic analysis. Reservoir quality is one of the most important parameters because a low amount of Hydrocarbon may be probably accumulated in poor reservoirs so that it can directly impact potential Hydrocarbon reserves for economic assessment.

To explore and appraise of the deeper reservoirs, existing seismic data alone cannot explain for deeper horizons due to the poor quality of seismic resolution. Thus, new exploration methods such as 3D seismic acquisition, surface geochemistry (microbial and micro-seepages) and transient electromagnetic method (TEM) with induced polarization (IP) can be applied for solutions.

Being a geologist in the G&G department for onshore exploration projects, allow me to serve the roles of studying structural and sedimentary aspects of the rock layers to identify possible oil traps, and identifying or locating the potential prospects or a place in which there are conditions that would favor hydrocarbon accumulation in commercial quantities. For a little bit more detail, I integrate the knowledge of geology to put in regional evaluation and facies analysis of the reservoir rocks with respect to thickness, net to gross ratio, porosity trend with depth and hydrocarbon saturation for the volumetric calculation of potential Hydrocarbon reserves of deeper reservoirs integrated with interpreted seismic data provided by Geophysicists, regional wells log data existing in our company and data available in the public domain.

Exploration is a multidisciplinary assessment working with all available geology data. First of all, to find the oil & gas, exploration geologists initially look for the Petroleum System where the area will potentially generate Hydrocarbon. They use geochemistry data, seismic, nearby field data and outcrop geology data. Another exercise used is risk assessment to know the chance of exploration success. It is directly related to drawing the decision made by management.

What are exploration challenges and how can they be managed?

From this study, exploration challenges for deeper prospects are drilling operation challenges for overpressure and uncertainty of risk assessment due to substantial data gaps and geological complexity for potential Hydrocarbon prospects evaluation.

To mitigate the drilling hazards in overpressure zones, pore pressure prediction is requisite for the design of the drilling program and casing design in order for safe drilling completion and to cut down drilling costs. To overcome the drilling problems, we are now studying pore pressure prediction from well log data to integrate with mud weight and drilling data.

Furthermore, lack of information and limited data is challenging us to perform geological model and risk assessment in exploration studies. To minimize the uncertainty at G&G studies, we are now considering to acquire additional new data in order to de-risk in exploration.
Events

TOWN HALL MEETING in MANN FIELD

29 MAY 2019 (WEDNESDAY)
MOTORLOGUE Visit @ TOWN HALL MEETING
Human Resources Department

Human Resources (HR) is one of the fundamental departments in an organization, where the entire engagement processes with all employees are made during their time in the organization. For the past few years, human resources have been shifting to the development of human capital where the department focuses not only on the management processes but also the individual development of the employees within the organization for the long-term growth of both the employees and the organization itself.

MPRL E&P’s HR Team has also put the thought of human capital in mind while fulfilling the department’s objectives and goals along with the main functions of HR: recruitment and selection, welfare and benefits and learning and development. HR makes sure that employees in MPRL are entitled to all the benefits according to the Myanmar Labour Laws and Social Security Laws along with the additional entitlements given by the organization itself such as medical insurance and scholarship programs for the children of the employees. When it comes to the internship programs, both the undergraduate and graduate students of different faculties are also welcomed whether they are from local or foreign universities.

With the aim of focusing on human capital development, the members of the HR team has focused on the driving force of implementing various career development programs for the employees in both the head-office and field operations such as formal mentorship programs, external technical trainings, corporate skill trainings, success planning programs, referral programs and giving out outstanding performance awards and service years awards to motivate the employees and strengthen employee retention. Moreover, the team members of the HR team usually make a trip down to Mann Oil Field for the awareness sessions, training and engagement with employees in the operations team.

Aside from the HR functional processes and the development programs, the HR team has implemented and reviewed numerous policies and procedures of MPRL E&P and GoCs such as the GoCs Internal Transfer Policy, GoCs Service Year Policy and so on. MPRL E&P’s HR team has committed to maintaining a good relationship with GoCs HR teams by providing and sharing knowledge of HR procedures across business units, strengthening HR network communication and sharing information regarding today’s HR practices and applicable laws. Furthermore, the department makes numerous engagements with the other departments within the organization, external stakeholders and the industry-wide corporations as well.

Khin Soe
Human Resource Manager

Khin Soe has been leading the HR team of MPRL E&P Pte Ltd as Human Resource Manager since she joined the organization in 2017. Her educational qualifications involved achieving a Bachelor’s of Science specializing in Chemistry from the University of Yangon and attaining a Diploma in Human Resource Management. She started off her career path in administration and joined the HR career journey by working as an HR and Admin Executive at UMW Machinery Ltd. for 6 years and HR Manager at Asian Harm Reduction Network Myanmar (INGO) for 3 years. Then, she gained her HR experience in the oil and gas industry by working as a HR Senior Coordinator at Daewoo International Myanmar E&P and HR Business Partner/Country HR for Myanmar and Thailand at Baker Hughes International Holding Company for 3 years each. During her time at Baker Hughes, at first, she was assigned to the Myanmar branch and later assigned to handle the overall HR operations and development of both Myanmar and Thailand. During her 17 years of working in the HR field with years to be continued, she has performed HR planning, recruitment and selection, remuneration and benefits, employee relations and engagements plan, leading HR policy reviews and HR compliances.

Here at MPRL E&P, she manages and monitors all the processes of the team but one of her main responsibilities is to monitor and make sure there is an effective performance management program (PMP). Furthermore, developing organizational capability and succession plans has been one of her main responsibilities for the development of the organization and the employees themselves. She has initiated the Formal Mentorship Program with HoBs and is currently working on the implementation process of the succession planning process. During her time here at MPRL E&P, she has also implemented the GoCs internal transfer policy, GoCs service year policy for rewards and the referral program whose purpose is to incentivize employees for their participation in the talent acquisition plan and employee retention for long-term workforce strengthening to develop the organization itself, HR team and the employees in the organization. Moreover, she has a plan to launch the Learning Club during this fiscal year for the soft skills development of the employees as well. With the aim to transfer from being manual to digitalization, she has been focusing on the implementation of the HRIS system for the team which will be implemented soon in the near future.

Khine Nwe Oo
Assistant Human Resource Manager

Khine Nwe Oo joined the HR Team of MPRL E&P Pte Ltd as the Assistant HR Manager in 2017. Before joining the oil and gas exploration and production industry, she has a total of 7 years experience in the Human Resource sector in the aviation industry, where she took on the role as a generalist HR professional and acquired the position of Head of Department for Golden Myanmar Airlines and Myanmar National Airlines. During her time in the aviation industry, she took the responsibility in the transition of HR functions from traditional labour relations functions into comprehensive HR. Moreover, with regard to the organizational development, she took on the corporate transformations where HRIS technology was implemented and focused on the change management for the HR initiatives. As for her educational background, she received a Bachelor’s of Industrial Chemistry (Honours) in 2002 and a Master of Business Administration in 2009.

Currently in her role as the Assistant HR Manager, she is responsible for the overview of the learning and development section of MPRL E&P, which
focuses on human capital development. During her time here, she has established appropriate L&D programs through the linkage with external stakeholders for effective training programs to build a high-performance talented workforce. Moreover, she has developed, implemented, and monitored the Formal Mentorship Program and Reward and Recognition Program as part of the in-house L&D programs. As MPRL E&P, one of her main responsibilities, and the sole responsibility of her's, is to introduce the result-oriented Performance Management system to leverage the competence, leadership capability and performance efficiency. Aside from the L&D section, she also manages and monitors all HR policies and practices to be in alignment with the applicable Myanmar Labour Laws and Social Security Laws.

Ei Ei Khin
HR Officer (Learning & Development)

Graduating from the University of Computer Studies, Yangon, specializing in Computer Software Engineering in 2012, Ei Ei Khin landed a job as a Junior System Engineer at NTT Data Myanmar where she worked for a year after her graduation. With the thought of changing her career path, she attended the Single Subject Diploma in Human Resource Management from the Institute of Commercial Management, UK before she started working as an HR Assistant at Pact Global Microfinance Fund for more than 2 years. While working as the HR Assistant, she started her journey as a postgraduate student and achieved her Master of Business Administration from HELP University, Malaysia in 2017. In the beginning of 2017, she joined MPRL E&P Pte Ltd. as a Junior HR Officer of the Learning and Development Section before she got promoted to HR Officer.

Since she started working at MPRL E&P, she has worked in the Learning and Development section, where she works on the succession planning and gap analysis of technical and business support departments, reviewing PMP opening goals of all the employees and updating the HR department’s policy and programs. Moreover, she is the focal person for contact to and from all the department heads regarding the promotion process, which is a part of the career development program and the outstanding performance program.

Yin Nyein Oo
Junior HR Officer (Welfare & Benefits)

Yin Nyein Oo is a strong member of the HR team who takes the sole responsibility of the welfare and benefits section of MPRL E&P Pte Ltd. Graduating from Yangon University of Economics, specializing in Commerce, she continued to expand her education in the HR sector by achieving a Single Subject Diploma in Human Resource Management from the Institute of Commercial Management, UK and attended the certification of Understanding Myanmar Labour Laws. She has been working solely as an HR practitioner since the start of her career and has 10 years of work experience in the HR sector with many years to be continued. She worked at City Mart Holding Ltd. for 7 years and worked as an Assistant HR Executive most recently where she acted as the Payroll Section Head and Specialist of Compensation and Benefits.

She joined MPRL E&P as the Junior HR Officer specializing in Welfare and Benefits in January 2017. She takes full responsibility in arranging the benefits of the employees by dealing with external governmental offices such as the Social Security Board Office and Labour Office and internal GoC sister companies for the GoC wide welfare and benefits such as arranging internal children’s scholarship programs, medical insurance, health programs (eg. Yoga session) and many more. Furthermore, she is one of the coordinators in the HR orientation program to explain regarding the welfare and benefits section. Her main responsibilities are registering leave requests, regular labour registration and the employment contract processes.

K Thant Syn
Junior HR Officer (Recruitment & Selection)

K Thant Syn graduated from the National Management Degree College under the Yangon University of Economics, specializing in Business Management in 2015. A year later, she went on to study a Masters of Human Resource Management and Industrial Relations at the University of Sydney, Australia and graduated in 2018. During the year gap between her degrees, she interned at MPRL E&P Pte Ltd’s Human resources department for three months before continuing to work as an HR Administrator for a year. After graduation from her Masters degree, she joined MPRL E&P’s HR team again as the Junior HR Officer at the beginning of 2019.

In the role of Junior HR Officer, her responsibilities focus on the recruitment and selection sector of MPRL E&P Pte Ltd. She works as the focal person of the R&S function and communicates with the respective hiring departments of both MPRL E&P and other business units for a smooth talent acquisition process. In the running recruitment process, she also communicates with different external stakeholders such as the focal people of recruitment services to get qualitative candidates for the long-run in the organization. Moreover, she takes responsibility in preparing the reports such as interview assessment reports, turnover reports and statistics to assist the HR Manager and Senior Management in their review of data. Furthermore, she works as the facilitator for the HRM presentations during the new staff orientation process.

Htoo Suzan Lin
HR Administrator

Htoo Suzan Lin achieved her Bachelor’s degree from Dagon University in 2013, specializing in Chemistry. After her graduation, she pursued a Diploma in Human Resource Management from the International Qualifications Network (IQN), UK. In 2016, she joined MPRL E&P as an intern for four months before continuing to work as an HR Administrator until now. Although she has been working continuously throughout the years, she has been expanding her educational qualifications as well. She attained her Single Subject Diploma in Business Management and Administration from the Institute of Commercial Management (ICM), UK in 2018. Currently, she is attending a Group Diploma in Business Management from the Association of Business Executives, UK.

Her main responsibilities as the HR Administrator is focused more on the assistance of the Learning and Development section especially on the Performance Management Process, Formal Mentorship Program and trainings. One of her duties is to work as a training focal person where she arranges internal and external corporate trainings, training bonds and administration tasks for the training sessions. Furthermore, she assists in the PMP awareness workshops and HR policy and program awareness trainings. She is responsible for the preparation and submission of weekly and monthly reports of the HR team to Senior Management. Moreover, she also supports the cross-functional departments regarding the training-hours data whenever needed. In the new staff orientation program, she participates as the facilitator for the L&D section.
How does climate change?

Dr. Eloi Dolivo

This paper continues on a first paper on the subject in the previous issue of Insight!, and again does not necessarily express or represent MPRL E&P's thoughts on the subject but solely presents some enquiries and thoughts of its author.

A reminder of the last issue of Insight!: The snippet on climate was describing in a very simplified manner the various parts of the complex machine: the interaction of the sun, the atmosphere, and of the cycles of the water and the carbon dioxide greenhouse gases, which result in many feedbacks. One of the conclusions was that the budget of the carbon dioxide greenhouse gas cycle is slightly positive, only barely 3%, leading to a temperature build-up due to the build-up of carbon dioxide. The amount of this excess is equal to about half of the carbon dioxide caused by human activities worldwide.

What's in this issue: Having presented you with these various parts of the climate machine, how do they work together? How does climate change? How fast? Can we forecast its future?

The civil society and the governments demand black-and-white answers and simple figures with regard to how hot and rainy will the weather be at the end of this century. But scientists deal with complex interacting cycles and models leading to uncertainties, and can only give grey answers under the form of ranges of figures. These different perceptions and needs drive and often cloud the politics around the issue (fig. 1).

1. What does the past tell us on climate?

It all depends on how distant this past is, it also depends on what we measure, whether direct climate indicators in the past, such as temperature, or indirect data that give indications of the temperature in the more distant past.

Climate change is not new; climate has always changed and will continue to change, if not drastically over a lifetime, at least over the scale of the centuries and beyond, simply because the various parts that make climate always change, because of the total budget resulting from the various cycles always change from positive to negative.

This could be compared to a factory making up several products which variously sell in the market: some products sell well and contribute to a profit, while others may hardly sell and result in a deficit. The total budget may be in profit or deficit depending on the balance impact of all the various products. The difference with climate is that we cannot judge ‘‘let’s stop producing this brand which drives us to bankruptcy’’ … or can we?

Climate change is now making headlines, because it appears to change faster than ever recorded before.

1.1 Near past

Direct worldwide measurements of weather parameters (temperature, rain, composition of air, especially greenhouse gases, etc.) date from about 1850, when the industrial revolution was well underway, whether by industrialization of Europe and North America or by exploitation of mineral and agricultural resources in the colonized world. Let’s concentrate on temperature, and on one of the cycles ruling climate: the carbon cycle.

Fig. 2: Temperature and carbon dioxide since 1850; note how wars as well as economic and oil crisis impacted the human emissions of carbon dioxide; also note how the conclusions of the dedicated UN commission on climate change are not yet impacting those emissions

Figure 2 shows how temperature is increasing alongside with the increase of human emissions of carbon dioxide. All the scientific societies around the world dealing with any science concerned with climate recognize the fact, including the American Association of Petroleum Geologists since 2011:

https://www.aapg.org/about_aapg/offices/policy/statements/details/articleid/12111/climate-change

1.2 The telltales of temperatures in the past

But might you say, surely there has been such warm periods in the past as we have today. The problem is that we do not have any direct record of temperatures stretching beyond 1850 in the past. We can however use time machines, proxy data that are depending much on climate, therefore temperature and that we can compare or calibrate on the present temperatures.

One of the best examples is dendrochronology (fig. 3), a time machine to travel up to about 3,000 years ago to estimate ancient temperatures.
Let's climb in our time machine and look at how the climate changed in the historical times over the last 2,000 years in Myanmar (fig. 5). Interestingly indeed, two major periods of invasions of the country occurred at times of extreme variations in climate towards the years 900's, and during a marked cooling period in the early 1300's. Both periods may have seen extreme climatic events, storms, floods, droughts, which may have uprooted people by upsetting crops, forcing farmers to seek refuge and better life near more fortunate neighbours. Modern good books of history actually often introduce their chapters with a summary of the prevailing climate, showing that many ancient wars, invasions and upheavals are direct consequence of climate change.

Let's travel even earlier and see the larger picture over the last 800 thousand years (fig. 6). Assuming you are reading this paper in the evening at home, 800 thousand years ago is like this morning if you shrink the existence of the Earth to a 12-year period. Since this morning, the Earth would have gone through eight periods of cooler periods called "glaciations", which would see ice descending from Hima-
polar ice caps are particularly at risk.

- **Weather**: Increase in temperatures, with dry regions becoming drier; wet regions rainier; more extremes on colder spells and hotter heat waves also becoming more unseasonal, stronger storms and cyclones.

- **Society**: 5% of the world population (i.e. more than 375 million people, some five times the population of Myanmar) lives along coastal areas at less than five meters above sea level, and are therefore under direct threat of rising sea level following climate change. More people, especially farmers, may have to adapt or leave their land as it becomes less or not cultivable. Some major cities may be evacuated and rebuilt more inland.

![Fig. 7: How may climate change by the end of this century? Temperature is to increase on average by 4°C if business continues as usual, and 0.5°C if the Paris Climate agreement is fully adhered to.](image)

3. Some final words

In conclusion, even though carbon dioxide makes up in proportion the equivalent of only one small glass in a cube of 1 cubic meter of air; and even though our human activities are not even half a teaspoon that glass of carbon dioxide, **that half-teaspoon is enough to accelerate climate change**.

Just a little food for thought while the exploitation of petroleum resources is fingered as the main culprit for climate change:

- **Petroleum as raw material**: petroleum is not only a fuel probably aggravating the greenhouse effect, but is also a raw material. Some 25-30% of gas is used for fertilizers and to produce precursors to plastics, some 3% of oil is used to produce lubricants, such as to help engines run smoothly.

- **We live on a finite Earth**: Based on present reserves, rate of discoveries and petroleum consumption, the world could be in serious risk of running out of oil and gas in 50 to 70 years.

- **Electricity from renewable sources**: In a generation time, electricity will have to come from renewable sources of energy (including to recharge the batteries of electric buses and cars). Meanwhile, gas is the ideal transition fuel to produce electricity because of its unbeatable energy efficiency (please refer to your favourite magazine issue 15 "How is your Home Lit with Gas?").

- **Buddhism is surely part of a solution**: Myanmar’s culture has a role model to play as "... one of the most fundamental requirements is to control rampant desire and consumption ... (in "Sustainability and Buddhism: How do we measure quality of life and degree of happiness?" Shuichi Yamamoto and Victor S. Kuwahara in [http://www.iop.org/jp/Documents/1020/yamamoto_kuwahara.pdf](http://www.iop.org/jp/Documents/1020/yamamoto_kuwahara.pdf))\]

Want to know more? Don’t hesitate to dive into [https://ourworldindata.org/](https://ourworldindata.org/). A fascinating site of just data, maps, graphs, basic analyses in non-technical language to help you understand **just the facts**, no politics, no bias, no agenda, **just data**. So that you can make up your mind without guilt and without passion. That’s the beginning of how you can guide your life with knowledge. Who knows: the next idea to spare resources in our daily grind may be yours?

---

**M&AOSB’s Inaugural Peer-to-Peer Information Dissemination Campaign reached more than 1,600 Community Stakeholders**

![Yin Mon Aye](image)

Myint & Associates Offshore Supply Base (M&AOSB) successfully completed the Peer-to-Peer Information Dissemination Campaign in order to raise awareness of the proposed Offshore Supply Base and the M&AOSB Operational Grievance Mechanism. The campaign was led by 16 Community-based Volunteers as well as the community members who participated in the Cross-Learning Visit to Mann Field in December 2018. During the campaign, the community-based volunteers and trip participants shared their experiences and honest opinions on what they encountered during their trip to Mann Field, including the MPRL E&P Group of Companies’ approach to environmental and social responsibility.

A baseline survey was conducted to assess the baseline knowledge of the community related to the Operational Grievance Mechanism process and procedures and the proposed Offshore Supply Base. The objectives and the targeted number of campaign audience members were defined based on the results of the baseline study. The launching ceremony was successfully organized on 27 November 2018 at the General Administration Department Office in Ngap Yoke Kaung Town and overall the Peer-to-Peer Information Dissemination Campaign reached more than 1,600 community stakeholders in its 33 communication sessions conducted from November 2018 to March 2019. Upon reaching the targeted audience, the campaign successfully concluded with the knowledge quiz shows in Nanetharpu Village Tract, Kyway Chaung Village Tract and Ngap Yoke Kaung Town and the community stakeholders actively participated in the competitions. The endline survey is planned to be conducted to examine the effectiveness of the campaign and the lessons learned will be addressed in the planning of the campaign in this fiscal year 2019 - 2020.

---
M&AOSB receives Environmental Compliance Certificate (ECC) for Proposed Offshore Supply Base

Kyein Htin Aung

After nearly three years of commencing ESIA works, M&AOSB has received an Environmental Compliance Certificate (ECC) for the proposed Offshore Supply Base (OSB) in Nga Yoke Kaung Bay in April 2019, Nga Yoke Kaung Bay was chosen after a careful site selection process that included technical, environmental, and social criteria, based on a third party expert recommendation. The receipt of an ECC is a major milestone confirming that M&AOSB has completed its ESIA in accordance with the prevailing Myanmar laws and national guidelines. M&AOSB’s ESIA went through a rigorous and multi-stakeholder review process led by the Environmental Conservation Department last year almost one and a half years. The expert review panel is made up of ministries, other government bodies, academics, and subject matter experts, and approximately 70 reviewers deliberated over findings in two review team meetings lasting 11 hours. In addition to the multi-stakeholder desktop review, ECD and expert reviewers visited the M&AOSB project area in November 2018 for the purposes of ground-truthing and provided suggestions to improve the assessment.

Transparency and project information disclosure

M&AOSB’s ESIA took 6 public consultation rounds which included 29 engagement sessions in 7 locations, covering 4 cities and 3 village tracts. Over 1,100 project stakeholders were consulted through community meetings, in addition to the continued engagement that took place with specific project stakeholders.

In June 2016, M&AOSB undertook an observation trip to the intended project area to study the socioeconomic conditions of local communities. In an effort to be a good neighbor, initial engagement and public consultations took place in October 2016 to introduce the MPRIL E&P Group of Companies and its track record as a responsible investor. During this consultation round, two community-based volunteers from Mann Field traveled to Nga Yoke Kaung to present to MPRIL E&P Group’s environmental and social performance and to solicit concerns and feedback from local communities concerning the new planned project.

In December 2016, M&AOSB appointed a global sustainability consultancy, Environmental Resources Management (ERM), to independently evaluate the environmental and social impacts associated with the proposed project. Following the Myanmar EIA Procedures (2016), the findings were disclosed to project stakeholders and the general public in March 2018 in a total of 8 disclosure workshops. Disclosure workshops were completed with the intent to:

1. Provide information about the proposed project and the developer
2. Disclose findings of the EIA and measures that the developer commits to implementing in order to mitigate adverse impacts to the environment and the communities as a result of project activities
3. Seek comments from a diverse range of stakeholders on the EIA results
4. Secure free, prior, informed consultation (FPIC) of project-affected stakeholders

During the workshops, ERM discussed in detail the baseline conditions of the biophysical and human environment near the project site, expected impact of the project on these environments, mitigation measures that M&AOSB will implement during the life cycle of the project, and monitoring plans to evaluate changes to these environments.

M&AOSB is the very first offshore supply base project in Myanmar to be granted an ECC. In June 2017, M&AOSB received a permit from the Myanmar Investment Commission (MIC) to build and operate the first offshore supply base in Myanmar that will offer comprehensive services, reliability, and efficiency as well as the industry accepted health, safety, and environmental standards required by international and national energy companies operating offshore oil & gas blocks in Myanmar.

The ESIA Process

Key Milestones of the ESIA Process

<table>
<thead>
<tr>
<th>Milestone</th>
<th>Date</th>
</tr>
</thead>
<tbody>
<tr>
<td>Contract Signed with ERM</td>
<td>21 Dec 2016</td>
</tr>
<tr>
<td>Scoping Phase Public Consultations</td>
<td>18 - 18 Jan 2017</td>
</tr>
<tr>
<td>Investigation Phase Public Consultations</td>
<td>3 Mar 2017</td>
</tr>
<tr>
<td>Conducted Baseline Survey</td>
<td>13 - 18 Sept 2017</td>
</tr>
<tr>
<td>EIA Report Submitted</td>
<td>19 Jan 2018</td>
</tr>
<tr>
<td>EIA Disclosure Workshops</td>
<td>8 - 16 Mar 2018</td>
</tr>
<tr>
<td>Contract Signed between ECD and MYPES for 3rd Party Review</td>
<td>10 Aug 2018</td>
</tr>
<tr>
<td>First Review Team Meeting</td>
<td>13 Sept 2018</td>
</tr>
<tr>
<td>Revised EIA Report Submitted</td>
<td>22 Oct 2018</td>
</tr>
<tr>
<td>Site Visit by ECD and Review Team Experts</td>
<td>17 - 19 Nov 2018</td>
</tr>
<tr>
<td>Second Review Team Meeting</td>
<td>6 Dec 2018</td>
</tr>
<tr>
<td>Final EIA Report Submitted</td>
<td>2 Feb 2019</td>
</tr>
<tr>
<td>Received ECC Certificate</td>
<td>24 Apr 2019</td>
</tr>
</tbody>
</table>

Summary of Public Consultations and Disclosure Workshops

<table>
<thead>
<tr>
<th>Activity</th>
<th>Period</th>
<th>Number of Sessions</th>
<th>Total Number of Consulted</th>
</tr>
</thead>
<tbody>
<tr>
<td>Preliminary Public Consultations</td>
<td>4 - 5 Oct 2016</td>
<td>3</td>
<td>107</td>
</tr>
<tr>
<td>EIA Scoping Phase Public Consultations</td>
<td>16 - 10 Jan 2017</td>
<td>4</td>
<td>112</td>
</tr>
<tr>
<td>EIA Investigation Phase Public Consultations</td>
<td>3 Mar 2017</td>
<td>2</td>
<td>168</td>
</tr>
<tr>
<td>EIA Investigation Phase Public Consultations</td>
<td>19 - 20 Jun 2017</td>
<td>5</td>
<td>245</td>
</tr>
<tr>
<td>Public Consultation Prior to Technical Survey</td>
<td>10 - 12 Jul 2017</td>
<td>4</td>
<td>92</td>
</tr>
<tr>
<td>EIA Disclosure Workshops</td>
<td>8 - 16 Mar 2018</td>
<td>8</td>
<td>274</td>
</tr>
<tr>
<td>Public Consultations Prior to Technical Survey</td>
<td>29 - 30 Oct 2018</td>
<td>3</td>
<td>151</td>
</tr>
<tr>
<td>Total</td>
<td></td>
<td></td>
<td>1,149</td>
</tr>
</tbody>
</table>

Myint & Associates Offshore Supply Base Ltd.

www.myintassociatesosb.com
M&AOSB successfully launched the M&AOSB Training Series for Fiscal Year 2019 - 2020

“Doing well by doing good.”

This fiscal year, M&AOSB will continue to work closely together with the community stakeholders to promote sustainable economic growth, community livelihoods, and higher levels of productivity through the creation of jobs and enhancement of entrepreneurship that can provide people with better economic opportunities.

The FY 2019-2020 M&AOSB Training Series will focus on driving inclusive economic growth by investing in, first and foremost, trainings to strengthen skills necessary during the impending construction of the proposed offshore supply base, developing suppliers to fulfill the base’s requirements for food and non-food supplies in the short and longer term, and protecting community health and safety throughout the life of the project. The trainings will include:

1. Welding, Mason, Carpenter, and Rebar Fixing Training
2. Heavy Machinery Operator Training
3. Basic English and Computer Training
4. Livestock Rearing Training
5. Vocational Training for Home-made Food Products
6. Vocational Training for Value-added Consumer Goods
7. Hospitality Training
8. Health Education Training (Public Awareness)
9. SH (Safety, Health & Environment) Training
10. Water Treatment Techniques Training

On 3 May 2019, M&AOSB launched its training series in Ngaputaw Township where government representatives and town administrators from across the township attended. Subsequently, the trainings were introduced to stakeholders in Nga Yoke Kaung Town, Nantharpu and Kyiway Chaing Village Tracts. Approximately 270 government, civil society, and community stakeholders attended the launching events.

M&AOSB deploys a multi-purposed approach to demonstrate the company’s commitment to undertake a strategic and impactful community investments which create shared value for the business and the society.

Led by community-based volunteers, locally available skilled laborers for the construction phase has been mapped. Developing this kind of skill mapping helps us understand the baseline level of skills within the host communities and to provide trainings to improve the competency of the local labor force. M&AOSB will partner with regional government departments, polytechnic centers, universities, private training schools within Ayeyarwady and Yangon Regions.
Insight! 26th June 2019

On 12th April 2019, we visited Vietnam for the first time. During the trip, there were four people: my two sisters, my brother and me. It was my first trip to Vietnam ever and it took four nights and five days. We visited Vietnam from Yangon, Myanmar and travelled to Ho Chi Minh aka Saigon, Vietnam by Vietnam Airlines. When we arrived at Ho Chi Minh City, we transited to Da Nang City because our targeted area to visit was south and central Vietnam. Before I talk about my trip, let me share my feelings about it. Even though I didn’t need to worry about the trip, I was nervous because it was the first time we were travelling on a trip arranged by ourselves. However, all of my worries were cleared by the happiness of traveling because I love to travel. OK! Time to stop my worries about the trip here. Let’s continue to talk about the sweet memories of my trip instead. As I said before, our targeted places to visit were the south and central Vietnam.

A Valuable Trip to Vietnam

Nyaw Htet Aung

On 12th April 2019, the whole day was a busy with flight by flight and place by place but all in all, my favorite places that I saw in Vietnam were Ba Na Hills, the Lady Buddha, Da Nang Museum of Cham Sculpture and Cu Chi Tunnels. On 13th April, we went to Ba Na Hills which is a famous place in Da Nang City. Ba Na Hill Station (or Ba Na Hills) is a hill station and resort located in the Truong Son Mountains west of the city of Da Nang, in central Vietnam. The station, advertised as “the Da Lat of Da Nang province” by the local tourism authorities, was founded in 1919 by French colonists. The colonists had built a resort to be used as a leisure destination for French tourists. The Ba Na Cable Car, opened on 29 March 2013, holds the world record for longest non-stop single track cable car at 5,801 meters (19,032 ft.) in length. Its latest tourist attraction is a wonderful bridge which is called The Golden Bridge located 1,400 m above sea level above the Ba Na Hills, offering majestic panoramic views of the surrounding countryside. This was one of the reasons we wanted to visit Vietnam. As per the news, tourism in Vietnam has experienced a boom as more and more people discover the beautiful places to visit in this remarkable country; the structure is part of a $2 billion investment to bring even more than the 1.5 million visitors the area receives annually. But, it is the giant sculpted hands that give it the true wow factor. There is also another beautiful place named French Village on the Ba Na Hills, mountains of Da Nang. You will see a French cathedral, buildings, and restaurants. It’s so amazing!

Lady Buddha Da Nang is located at Linh Ung Pagoda on Son Tra Peninsula in Da Nang which is 9 km away from My Khe beach. The Lady Buddha Da Nang statue is inside the Linh Ung Pagoda courtyard with a height of 67m and is the tallest statue in Vietnam. There are 17 floors in the statue’s lap, and each floor has an altar with 21 Buddha statues which have different shapes, facial expressions and postures. One more special trait of the Lady Buddha Da Nang is wherever you are standing in any place in the city, you can easily see the Lady Buddha statue which leans on the mountain, facing the sea.

The Museum of Cham Sculpture is a museum located in Hai Chau District, Da Nang, central Vietnam, near the Han River and is also known as the Cham Sculpture Museum (it was constructed by the French in Da Nang when they colonized Vietnam). The museum houses the world’s largest collection of Cham sculptures and is a popular tourist attraction in Da Nang as well. Most existing sculptures in the Da Nang Museum of Cham Sculpture are original works on three main materials of sandstone, terracotta, and copper dating from the seventh century to the fifteenth century which is diverse on artistic styles, shapes, and architec-

“Travel makes most modest. You see what a tiny place you occupy in the world”

Gustave Flaubert
ture. It looks like each work of art here hides its own story and precarious fate like the ancient Champa kingdom. Going to the Museum of Cham Sculpture is to admire the relentless creativity of the ancient Cham artisans who have carved up timeless masterpieces. The Cham Sculpture Museum thus plays an important role in the development of Da'Nang tourism. The tunnels of Cu Chi are an immense network of connecting tunnels located in the Cu Chi District of Ho Chi Minh City (Saigon), Vietnam, and are part of a much larger network of tunnels that underlie much of the country. The Cu Chi tunnels were the location of several military campaigns during the Vietnam War and were the Viet Cong’s base of operations for the Offensive in 1968. The tunnels were used by Viet Cong soldiers as hiding spots during combat, as well as serving as communication and supply routes, hospitals, food and weapon caches and living quarters for numerous North Vietnamese fighters. The tunnel systems were of great importance to the Viet Cong in their resistance to American forces and helped to counter the growing American military effort. American soldiers used the term "Black Echo" to describe the conditions within the tunnels. For the Viet Cong, life in the tunnels was difficult. Air, food, and water were scarce and the tunnels were infested with ants, venomous centipedes, scorpions, spiders, and vermin. When I went into the 20 meter long tunnels, I was scared and felt a lack of air to breathe.

Vietnamese people are cute but most people couldn’t speak English as well. Here, I would like to tell a funny story about our local guide. When we were at Lady Buddha, our guide told us that you can all go to Monkey Mountain with “ZEEP” by pointing to the mountain. We were confused about what the ZEEP was and we realized then that he wanted to pronounce “JEEP” instead. So, it is important that you listen clearly to your local guide’s pronunciation even though they can speak English well. Therefore, if you have to visit there, I suggest you go with a local guide to make it easy to go anywhere in Vietnam.

What I loved the most for local food in Vietnam was the Vietnamese Noodles. It is delicious food. In Da'Nang, you will eat seafood every day - lunch (seafood), dinner (seafood). Whenever I saw the seafood on the table, I won’t eat anymore because I don’t like seafood very much. However, it was a beautiful and wonderful trip for me. In this trip, I gained so much knowledge: culture, civilization, food, religion, standard of living, etc. We can get more experiences like this by traveling so I would like to suggest to everyone try and visit anywhere in the world that they can. In conclusion, if I have a chance to visit Vietnam again, I would like to visit Hanoi, in the Northern Part of Vietnam.
The Balancing Act between Work and Life

Saw Eh Hsar Blute Htoo

In today's competitive society, work-life balance is considered important by many. I am one of them and always try to balance these two things. My goal is to be productive at work and at the same time, to have a happy life outside the workplace. Achieving work-life balance is a daily challenge. It can be tough to make time for family, friends, spirituality, personal growth, self-care, and other personal activities and the workplace. I believe in order to achieve this balance, happiness is the important thing and it's the foundation of a productive working life and happy private life. Family and work play important roles in our life. We can't choose our family, but we can choose our work.

So, it's very important to choose the right work that make you happy. Otherwise, you will not be balancing your work-life and achieve your goal.

After graduating in 2014, I started applying for many jobs that are suitable to me and got two job opportunities. When I faced to choose one opportunity, I have compared their salary, benefit, work environment, the working hours and the work schedule. Finally, I have decided to choose the organization that have a good working environment with 5-day workweek, even though it was low in salary. What I think is working 5 days a week and have personal time on weekend will make me happy. Likewise, in my current job, because of a good working environment and hour; I can balance my personal activities such as sport, study, hobbies and also socializing with colleagues.

I viewed my colleagues as the "second family" because I spend so much time together with them. We frequently hang out after work, do some activities in the weekend and travel with them on holidays. I think, without being together outside of work, it can take me a long time to feel comfortable with my team and freely collaborate. Forming friendships and relationships at work makes it a happier, enjoyable environment without having to drop productivity and cooperation.

After we graduated and entered work life, we became full-time employee, it's more and more difficult to meet and have time with friends. But when we say work-life balance, childhood friendship and external friendship are the things that you should take into considerations. Spending quality time with friends makes my day and boost the level of my happiness. Eating, gathering and taking a short trip with friends bring me laugh, ease my stress and make me feel good. So, while money can't buy the happiness, spending time

Moreover, I have a number of hobbies and interests that I enjoy doing alone, or with my family or buddies. These hobbies and interests are helping me to improve the work-life balance and getting more creativity, more confidence, and more ways to expand and express my passion and enthusiasm. It's also good to find out some new hobby and go beyond our comfort zone. Usually, we have a few hobbies or interests that remain with us throughout our life. But, some of the hobbies can be costly and having to give a lot of time to attain a basic skill level. Here are some easy hobbies that I have adopted during the previous year. Swimming and running are the hobbies that I have found interesting and it's not only fun but it also makes me get fit and stay in shape. Joining a weekly running club, participating in corporate running event and races have given me a chance to meet new people and advance my skills by working with more experienced people. Along with the long-term health benefits, these hobbies can develop self-motivation and boost energy levels.

Therefore, the work-life balance doesn't simply mean you have to balance by yourself. It means you have to make time for work, for friends and family and finally make time for yourself by yourself. And it is good to bear in mind that the more your work life takes up the space in your personal life, the more you're losing balance that's so important to your health and happiness.

With besties, is always a good investment for me.

Also, family plays an important role in achieving the balance of work and life. Spending time with family is one of the best ways to create memorable experiences. Nothing can replace the time we spend with our family. This is very true for the people like me who live far away from family. Throughout the whole year, we just have to three times together with family and the time is quality time with full of memories. My family has a Facebook Messenger group named "Sweet Family", it's the place where we share our days, messaging and making video call. My personal happiness is based on the strong support of my family. Even we're hundred of miles apart from each other, the encouragement they give, the happiness they share are always helping me to achieve the balance.
MOBILE CLINIC for LOCAL COMMUNITIES
2nd Trash Hero
Family Meeting held in Yangon

17th to 18th May 2019

Campaign in May 2019
Myanmar National Open Sailing Championship 2019
Surf & SUP National Championship

Organized By:
Surf Association Myanmar

Powered By:
Novel Saung Yacht Club Myanmar

Insight! 26th June 2019
CEO U Moe Myint greeting Prime Minister General Prayuth of Thailand

Our Chief Executive with Dr. Kobsak Pootrakool, Chief Spokesman for Prime Minister Prayuth’s Palang Pracharath Party and Khun Chartsiri Sophonpanich, President, Bangkok Bank Public Co., Ltd. at the ASEAN Business Leaders’ Summit held in Bangkok a day ahead of the 34th ASEAN Summit.

Special Breakfast Function hosted by Khun Chartsiri Sophonpanich, President, Bangkok Bank Public Co., Ltd.

Khun Kanit Si, Sr. Executive Vice President of Bangkok Bank, Dr. Kobsak Pootrakool of Palang Pracharath Party and CEO