



40 YEARS OF SHARED PROSPERITY

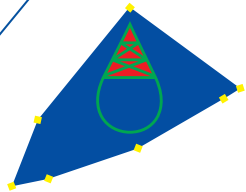
Malaysia-Thailand Joint Authority





40 YEARS OF SHARED PROSPERITY

Malaysia-Thailand Joint Authority



MALAYSIA-THAILAND
Joint Authority

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The Miracle of Collaboration



Rich gas deposits were discovered in the Gulf of Thailand in the 1960s. Neighbours, Malaysia and Thailand had to navigate a new socio-economic landscape; one that would call into review centuries-old cultural, historical and social ties. We were faced with choices. We could either fight over it or we could collaborate for the mutual enrichment of both countries.

We chose to build on the friendship we shared and work amicably together. We put in place the framework of a grand plan that outlined the areas where each country would prospect for gas. The mechanisms for the management of this precious resource were agreed upon. Finally, the legislation required for the exploitation and production of sizeable gas deposits was carefully drafted. A special purpose 'vehicle' was built by the governments of Malaysia and Thailand that would take us to 2029.

On 21 February 1979, a Memorandum of Understanding was signed and a unique organisation called the Malaysia-Thailand Joint Authority (MTJA) was born. Since then this Joint Authority has nourished both our economies. More importantly we have been able to strengthen the ties that bind us in ways that offer many key lessons in building bilateral relationships that are steadfast and enduring.

Personally, I have found it fulfilling to watch both Thais and Malaysians within MTJA unify around a common vision. I think we have a history of finding innovative and solution-oriented ways to bring people together. Thus the story told in this book of "brothers drinking from the same well" truly resonates among so many people in the MTJA family.

The MTJA organisational structure has at its apex two Co-chairpersons. Both equal; occupying a position of primus inter pares (first among equals). It is therefore an organisational practice between the Co-chairs to reach a joint position on all matters relating to the effective functioning of this Joint Authority. When board papers are prepared, the Co-chairs hold a four-eyed meeting before the formal board meeting. We strategise together, assess risks, reach a consensus and hold a joint position on important matters. We then allow for the directors to offer expert opinions and advice in discussions that follow that will help us make more accurate decisions.

Today, sustainable development has emerged as one of the most important concerns of the 21st century. Gas is being seen as not merely a transition product but a destination fuel of the future. Most of the gas produced at the JDA is bought for use by Malaysia and Thailand for domestic consumption. We see ourselves as part of the global community that is engaged in a renewable energy shift. We have established a research cess and the production sharing contractors contribute to this fund. Several research projects supported by MTJA look at energy efficiency and the reduction of carbon emissions, waste heat energy recovery and green solutions for drilling fluids.

I would like to think what we have created within MTJA is an inspiring synchronicity. We seek to achieve the best possible outcomes at every stage of our development. We have several employees, vendors, consultants, production sharing contractors and other stakeholders working in our offices in Thailand and Malaysia, but many work

remotely as well. In this commemorative book we recognise the work they do and the benefits each one brings. Unified teamwork has resulted in the MTJA contributing USD10 Billion to the coffers of both Thailand and Malaysia.

I would also like to put on record our gratitude for the cooperation extended by all government representatives, MTJA management and support staff who have been part and parcel of the MTJA organisation over these past 40 years. We place a high value on the kind of collaboration exhibited within the MTJA that exceeds the sum total of what can be calculated in only profits.

Going forward we have reminded both our governments that this collaboration could extend beyond 2029. Gas deposits have been discovered further afield and we look forward to perhaps welcoming other members within the ASEAN group into the MTJA fold. At MTJA we implicitly understand that collaboration is better than competition. We believe in the miracles that can occur through collaboration.

We have chosen as our front cover design of this commemorative book a stylised version of the Thai Kranok and the Malay Pucuk Rebong. Both are powerful symbols of harmony and peace. We find them fitting icons, reflecting 40 years of collaboration that has strengthened both our countries.

Tan Sri Dr Rahamat Bivi Yusoff
Co-chairperson (Malaysia) of Malaysia-Thailand Joint Authority

A Blossoming Malaysia-Thailand Friendship

There is a strong sense of permanence about the relationship between Malaysia and Thailand. We are inextricably linked; by history, by culture and by friendship. Over the years there have been many reasons for the relationship between the two countries to grow.

We saw immense benefits in being partners rather than competitors. Most significantly, we became founding members of ASEAN. The ASEAN relationship has had a ripple effect across all social, cultural and economic sectors. And I am happy to note that both our countries have prospered from this.

In the past 60 years or so, Thailand has proven to be a true and reliable friend of Malaysia. I am delighted to share here that the Malaysia-Thailand relationship is multi-dimensional and multi-layered, based strongly on mutual respect and trust. With the advent of social media and the convenience of travel, our relationship is poised to blossom with trade and people-to-people contacts becoming more exciting and dynamic.

The impacts of climate change are already evident around the world. As part of the Mekong River Basin, Thailand is dealing with these ecological impacts by leveraging strongly on natural gas made available to us from the Joint Development Authority Area (JDA). Thailand has used this clean source of fuel for all its energy production needs.

Globally, natural gas is the fuel of choice to power economic growth. Thailand is deeply committed to it as it is a cleaner burning fuel than coal and oil and it emits less CO₂ into the atmosphere. Besides, gas is more abundant than oil. At MTJA, we will continue to support the exploration and development of natural gas resources in the JDA for energy security as well as the economic prosperity of our two nations.

This 40th anniversary celebration demonstrates how we have built and sustained the Malaysia-Thailand friendship. The relationship has strengthened over the years. We like to think that this relationship

resembles close family ties. I believe in the idea of "Happy thy neighbour." If our neighbour is happy, we are happy too. Should there ever be a misunderstanding, we talk things through and get it resolved.

As Co-chairman of MTJA, I work closely with my counterpart Tan Sri Dr Rahamat Bivi Yusoff. We are guided by what is scoped out in the MTJA Agreement of 1990 and outlined in the earlier MoU of 1979. We will continue to work in the same spirit of friendship, trust and cooperation in the years to come.



HE Dr Kurujit Nakornthap
Co-chairman (Thailand) of Malaysia-Thailand Joint Authority







40 YEARS OF SHARED PROSPERITY

“It has been a wonderful journey to have reached 40 years of exceptional success in building a mutually beneficial relationship between two neighbouring nations. It took years of hard work and inspiring leadership to cultivate the trust and strong bond that we are proud of today. Heartiest congratulations to MTJA for a job well done.”

ZULKARNAIN ISMAIL
SENIOR GENERAL MANAGER JVM – MALAYSIA ASSETS, PC JDA



Two countries have come together, worked together and stayed united over the past 40 years in the true spirit of “brothers drinking from the same well.”



YM Tengku Tan Sri Dato' Seri Ahmad Rithauddeen (third from left) Malaysia Co-Chairman, HE Mr Bhichai Rattakul, Thai Co-chairman (middle) and Ismail Sulaiman (second from right) with platform officials

Nothing happens by chance. The Malaysia-Thailand collaboration was a deliberate decision to find common ground on which to build a meaningful partnership at several levels. At the government-to-government level, the prospect of a Malaysia-Thailand Joint Authority required respectful trust between the partners. This meant looking at ways and means to build an enduring relationship. A series of framework agreements was needed for transboundary sharing of hydrocarbon resources, fiscal regimes, fair distribution and capacity development.

Rather than taking a hard bureaucratic and legalistic route, key persons within the MTJA achieved this by simply spending time together, listening to each other's concerns, interests, needs, and then incorporating them into the larger MTJA agenda. Negotiation and discussion were vital to this process. As trust grew between the partners, it was found that each partner was more willing to make temporary concessions to promote a long-term collaborative relationship.

For example, a funding opportunity for research may be specified for a particular subject area. While this may fit the expertise and interests of an academic researcher of one country, the MTJA goals may be broader. The opportunity for exposure or learning that may be derived by one partner may outweigh tacit research project guidelines. Community or stakeholder interest is often a more important yardstick used. This is the MTJA way.

Miles of Smiles

Milestones provide an opportunity to stop and reflect on our roles and journeys that have been instrumental in creating shared prosperity. Every milestone within MTJA has been an opportunity to achieve our broader organisational goal for sustainability and long-term well-being.

The 40th Anniversary of MTJA offers us the latitude to take the Malaysia-Thailand relationship to a much higher level of collaboration that becomes ASEAN wide and regional. Malaysia and Thailand have worked so well together that the Co-chairs have called it “a miracle of collaboration.”



HE Dr Kurujit Nakornthap,
Thai Co-chairman & MTJA
Management visit the
Tok Bali supply base &
CHOC offshore processing
platform

“Prosper your Neighbour”

The friendship between Thailand and Malaysia has always been described as an endearing one. Rich gas deposits discovered in the Gulf of Thailand could have led to political strife; instead this has become a remarkable example of how the two neighbouring countries have navigated a new socio-economic landscape; one that binds us even closer economically, politically and culturally.

In a world of constant conflict over boundaries and resources, who would have imagined that a simple Memorandum of Understanding (MoU) could become a powerful model of inter-governmental partnership for the world to emulate. An MoU signed on 21 February 1979 by Malaysia’s Prime Minister, Tun Hussein Onn and Thailand’s Prime Minister, General Kriangsak Chomanan for the establishment of the Malaysia-Thailand Joint Authority (MTJA), would in 40 years become iconic of collaboration with a conscience. But more than that, it brought mutual enrichment and sustainable development to both countries.

This was largely because both countries, as members of ASEAN, realised that they shared not just common borders but a common future. The pioneers of MTJA such as YM Tengku Tan Sri Dato’ Seri Ahmad Rithauddeen, the first Malaysian Co-chairman and Thai Co-chairman HE M.R. Kasem Samosorn Kasemsri handled the overlapping claims for hydrocarbon resources in the Gulf of Thailand in a spirit of overwhelming friendship, mutual trust and great integrity. It was clear that a policy of “prosper your neighbour” was critical to successfully navigating a terrain of economic interdependence, energy security and peaceful co-existence.

This ‘Milestones’ chapter plots the MTJA journey; a special purpose ‘vehicle’ built by the governments of Malaysia and Thailand that would take us to 2029. And the great step beyond is pregnant with promise. Fresh hydrocarbon deposits have been discovered. With this discovery comes the possibility of extending the collaboration and economic growth to include other members in the ASEAN fraternity.



MTJA MILESTONES SINCE 1968

JANUARY
Thailand announces designation of offshore blocks boundary for petroleum E&P in Gulf of Thailand

1968

FEBRUARY
EPMI drills and discovers Piling-1 gas well (29 Mmscf/d) in the area later declared an overlapping zone

1971

MAY
Thailand officially proclaims its continental shelf boundary

1973

APRIL
Petroleum Development Act promulgates in Malaysia vesting exclusive rights to PETRONAS

1974

EPMI signs preliminary PSC with PETRONAS over its original contract area

MAY
Government officials of Malaysia and Thailand discuss problems regarding overlapping offshore area

1977

1976

Recommendations jointly made to Governments for both sides to suspend any E&P activities in the disputed area until the boundary issue is resolved

FEBRUARY
Malaysian and Thai officials verify and recognise respective boundary claims.

1978

1979

21 FEBRUARY
MoU signed in Chiangmai by the Prime Ministers of Malaysia and Thailand on the establishment of MTJA to explore and exploit resources in the Joint Development Area

OCTOBER
MoU ratified by both countries in Kuala Lumpur

1980

FEBRUARY
Malaysian and Thai Governments set up Joint MTJA Committee to discuss implementation of MoU; sub-committees include legal, technical, revenue and tax, customs and excise, organisation, PSC drafting

1981

19 OCTOBER
Adoption of Joint Authority Constitution

1989

JULY
MTJA Committee meeting in Bangkok recommends four-part solution regarding contractors' concessionaries in MTJDA and a new modified PSC formula for Governments' approval

NOVEMBER
Malaysian and Thai Governments endorse MTJA-Committee recommendation on the solution and new PSC formula

1990

MAY
Agreement on the Constitution of MTJA signed in Kuala Lumpur by the Foreign Ministers of Malaysia and Thailand providing detailed implementation framework for MTJA

JULY
MTJA Acts passed in both Parliaments





21 APRIL
Set-up of MTJA
Head Office in
Kuala Lumpur

Appointment of
first Chief Executive
Officer of the MTJA,
Charu-Udom Ruangsuvan
from Thailand

Signing of two Production
Sharing Contracts between
MTJA and its Contractors
for Block A-18 and Blocks
B-17 & C-19

Appointment of second
Thai Co-chairman of
MTJA, HE Mr Bichai
Rattakul

AUGUST
First Gas Discovery
confirmed in Block A-18
of the MTJDA after
CTOC successfully drilled
and completed well
Cakerawala-1A

NOVEMBER
Gas discovery confirmed
in Block B-17 of the
MTJDA after CPOC
successfully drilled and
completed Muda-1 well

Appointment of second
Malaysian Co-chairman
of MTJA, Tan Sri Datuk
Ahmad Kamil

OCTOBER
Appointment of the
second Chief Executive
Officer of MTJA, Ismail
Sulaiman from Malaysia

Appointment of third Thai
Co-chairman of MTJA, HE
Mr Sivavong Changkasiri

1991

22 JANUARY
Simultaneous promulgation of the
Malaysia-Thailand Joint Authority
Act 1990 (Act 440) in Malaysia
and the Thailand-Malaysia Joint
Authority Act B.E. 2533 in Thailand

1992

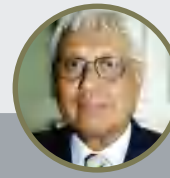
FEBRUARY
Appointments of first Co-chairmen and
Members of MTJA. Tengku Tan Sri Dato'
Ahmad Rithauddeen bin Tengku Ismail
and HE M.R. Kasem Samosorn Kasemsri
(Co-chairmen of MTJA)

1994

1995



1996



11-12 SEPTEMBER
First MTJA meeting held in Bangkok.
Head Office location and appointment
of CEO decided

Draft PSC approved for commencement
of negotiation with contractors

2000



JANUARY
Appointment of third Malaysian Co-chairman
of MTJA, Tan Sri Abu Talib Othman

1 OCTOBER
Appointment of the third Chief Executive
Officer of MTJA, HE Dr Kurujit Nakornthap
from Thailand

2004



30 SEPTEMBER
Signing of PSC between MTJA and
Contractors for the right to explore
and exploit petroleum in Block
B-17-01 of MTJDA

1 OCTOBER
Appointment of the fourth Chief
Executive Officer of MTJA, Zarei
Mohamed from Malaysia

2007



15 JANUARY
Appointment of the fifth
Chief Executive Officer
of MTJA, Abd Halim Che
Abas from Malaysia

2005

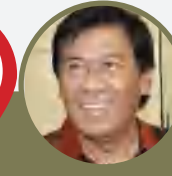
First gas producing at
Cakerawala Processing
Platform (CPP) at Block
A-18

2008



1 OCTOBER
Appointment of the
sixth Chief Executive
Officer of MTJA, Suriyan
Aphiraksatyakul from
Thailand

2009



1 OCTOBER
Appointment of the
fourth Malaysian and Thai
Co-chairmen of MTJA,
Tan Sri Khalid Ramli and
HE Mr Nopadon Mantajit

First gas production at
Block B-17 of the Muda
Processing Platform
(MDPP)

MTJA MILESTONES

SINCE 1968

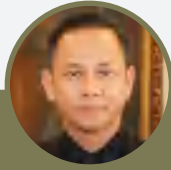
2015



OCTOBER

Appointment of the fifth Thai Co-chairman of the MTJA, Dr Kurujit Nakornthap

2016



23 FEBRUARY

The Bulan South-Bunga Bakawali Unitisation Agreement was signed by MTJA and PETRONAS

16 JUNE

Research Cess Agreement signed by MTJA and Universiti Teknologi PETRONAS

23 AUGUST

Supplementary Contract (No. 2) to the Production Sharing Contract for Block B-17-01

24 AUGUST

Research Cess Agreement signed by MTJA and Universiti Teknologi Malaysia

1 OCTOBER

Appointment of the eighth CEO, Dr Witsarut Thungsuntonkhun from Thailand, and DCEO, Abdul Muluk Ab Wahab from Malaysia

29 JUNE

Appointment of the sixth Malaysian Co-chairperson, Tan Sri Dr Rahamat Bivi Binti Yusoff

12 SEPTEMBER

Research Cess Agreement signed by MTJA, UTM and Chulalongkorn University

JANUARY

MTJA Long Service Award given to 8 MTJA staff for 24 years of service

FEBRUARY

MTJA achieved a revenue of USD10 billion

APRIL

6 Research Cess Agreements signed by MTJA and universities in Thailand and Malaysia

2013



JANUARY

Launching of MTJA book

23 MARCH

Signing of Suriya (Block A-18) and Suriya Selatan (Block PM2) Unitisation Agreement

21 AUGUST

Signing of the 2nd Agreement (SAGSA) for Block B-17 & C-19 and Block-17-01 and other related agreements

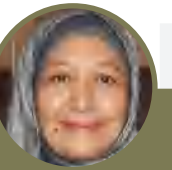
2010

MAY

Cakerawala condensate sales reach cumulatively 10 million barrels in Block A-18

Cakerawala reaches cumulatively 1 trillion standard cubic feet (Tcf) gas sales production in Block A-18

2011



APRIL

Signing ceremony of the Bumi-Bumi South Unitisation Agreement

OCTOBER

Appointment of the fifth Malaysian Co-chairperson, Datuk Noriyah Binti Ahmad

2012



OCTOBER

Appointment of the seventh CEO, Datuk Rosli Boni from Malaysia

2017



2018

2019



MTJA MILESTONES

SINCE 1968



"Amongst the remarkable outcomes of the bilateral cooperation that mark the efforts of the MTJA are shared prosperity and success. Its leadership has displayed outstanding maturity, wisdom, commitment, diplomacy, foresight and understanding over the past 40 years in upholding the equitable interest of both Malaysia and Thailand governments in the exploration and exploitation of natural resources in the joint development area, which is benefitting both the Thai and Malaysian people. My warmest congratulations to MTJA."



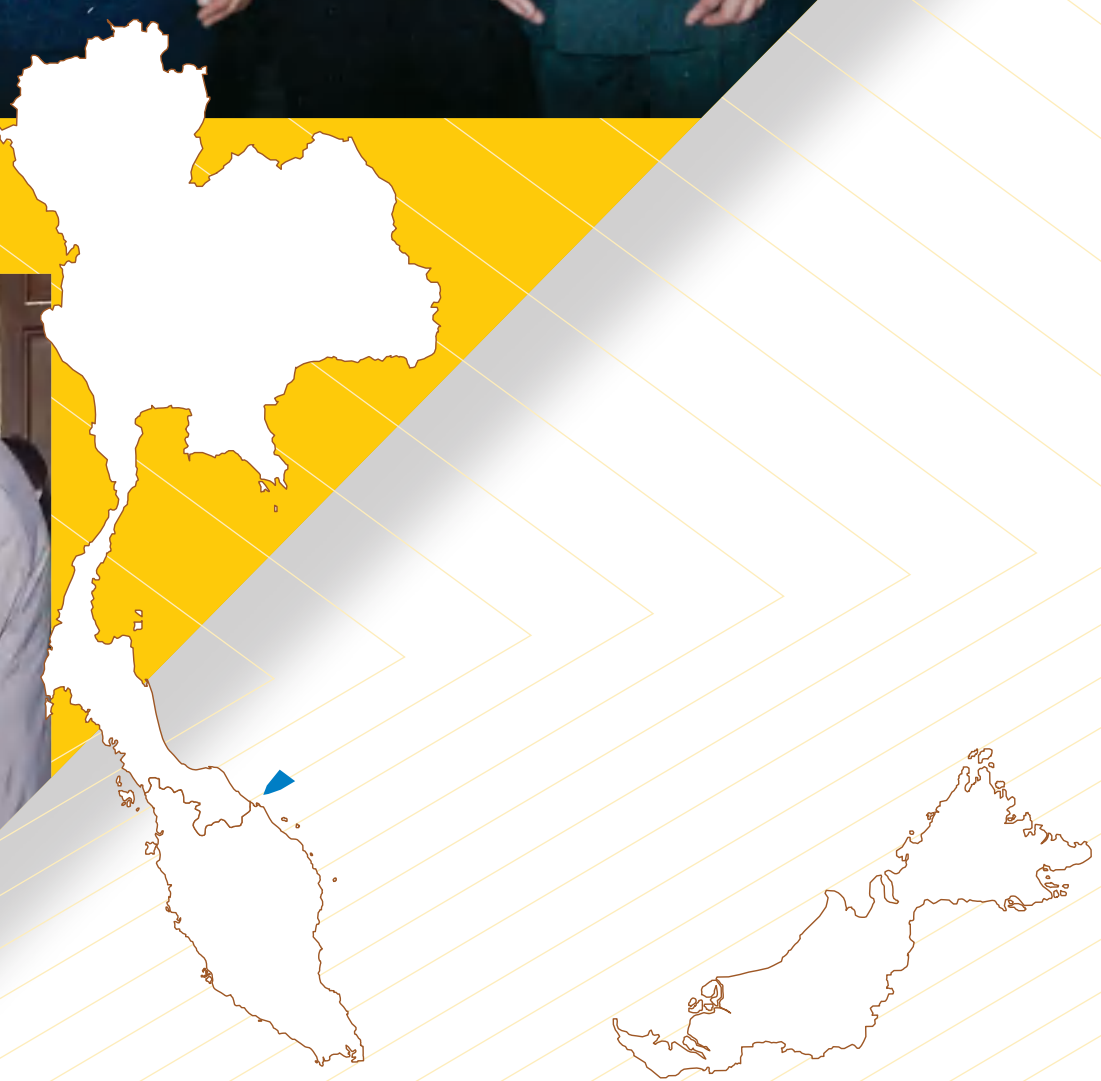
HAZANIE JAMIAN, GENERAL MANAGER, CPOC

COMING TOGETHER... HOW IT BEGAN

The lives of millions of Thais and Malaysians have changed for the better as a result of a unique initiative to jointly exploit and utilise non-living natural resources in the overlapping area in the Gulf of Thailand and North Malay Basin.

Naming ceremony of FSO
"Puteri Cakerawala"





ONE HUNDRED and fifty kilometres off the coast of Kota Bharu in Malaysia and 160km from Narathiwat in Thailand is an area in the Gulf of Thailand recognised the world over as a model of bilateral cooperation and mutual enrichment. More importantly, this wedge-shaped expanse known as the Malaysia-Thailand Joint Development Area (MTJDA) has, over the decades, exemplified the very essence of brotherhood between countries.

In the late 1970s, Malaysia and Thailand went through a period of negotiation and discussion to resolve the issue of overlapping areas in the Gulf of Thailand. As diplomatic approaches reached an impasse, both countries recognised that it would take some time to resolve the claims over boundaries.

A pragmatic and rational option therefore was to set aside the boundary delimitation issue for the moment, and jointly explore and exploit the non-living resources within the defined area.

This was agreed upon through a historic Memorandum of Understanding (MoU) signed in Chiangmai, Thailand on 21 February 1979 by the leaders of both countries, Malaysia's Prime Minister Tun Hussein Onn and Thailand's Prime Minister General Kriangsak Chomanan.

The MoU was subsequently ratified by both countries in Kuala Lumpur, Malaysia on 24 October 1979, paving the way for the establishment of a Joint Authority whose primary goal was to undertake the exploration and exploitation of non-living resources on behalf of both Governments within the area of overlapping claims in the Gulf of Thailand and North Malay Basin.

Encompassing 7,250 sq km, the MTJDA lies in the northern part of the Malay Basin. Here, thick sediments of tertiary sandstone, siltstone and shale are abundant, providing source and reservoir for oil and gas.

The Malaysia-Thailand Joint Authority (MTJA) – governed by members consisting of equal representatives of Malaysian and Thai government officials and managed by a team of professionals – is unique in that it has a juristic personality as provided for in the respective legislation of each country.

The Authority administers all exploration and exploitation of non-living natural resources in the joint development area. It is responsible for the formulation of policies including the right to permit operations and to conclude transactions or contracts for or relating to the exploration and exploitation of these resources.

Opposite page
from top:
**Signing Ceremony of
the Production Sharing
Contract Agreement on
21st April 1994**

**YM Tengku Tan Sri Dato'
Seri Ahmad Rithauddeen
with Thai counterpart
HE M.R. Kasem Samosorn
Kasemsri**

ASEAN has shown the world that overlapping claims can be settled without having to go to war. Normally such disputes would not be resolved easily but the leaders of Thailand and Malaysia decided that the best way to resolve the problem of an overlapping claim in the sea where there might be oil, is to agree to share the production of oil or gas within the two countries 50:50. This is a unique arrangement, never seen in any other country.

Tun Dr Mahathir Mohamad, Prime Minister of Malaysia



PROSPER YOUR NEIGHBOUR

Tun Dr Mahathir Mohamad, Malaysia's Prime Minister, has masterfully steered Malaysia out of social, economic and political turbulence. Collaboration, dialogue and mutual enrichment have been the basis for the win-win outcomes that he has brokered. At 94, he remains a man who thinks strategically and acts incisively.

A strong advocate of South-South co-operation he has often spoken of a "A New Deal For Asia" which is captured in his book of the same name. The MTJA model was one such new deal that continues to prosper both Malaysia and Thailand. He believes that we in Asia all share a common fate and has urged Asian political leaders to challenge some of the most fundamental tenets of global capitalism.

He says the collaboration with Thailand has been something that independent Malaysia practiced from the very beginning. "We have had to work together on many fronts; in the management of the insurgency for instance and even now, we jointly manage the problems in Southern Thailand," he says.

"Our success has been due to meaningful collaboration that has been built on long-term understanding, knowing each other and trusting each other as friends."

Tun Mahathir has always been an advocate of win-win outcomes, the final win really being communities and people at the poorest levels.

"We have to convince people that what we are doing is the right thing to do. Malaysia's slogan is to prosper your neighbour. If your neighbour is prosperous, there will be less problems spilling over into your own country. So we work hard (as in the case of MTJA) to have close cooperation," he asserts.

"That is our firm belief, and I think that is also the Thai attitude with regard to us. Our ultimate aim is to improve the well-being of our people. It's not about political or territorial gain, but how our actions benefit the people as a whole. And I think all Governments should dedicate themselves to achieving this," he adds.

Interview with Tun Dr Mahathir Mohamad,
16 August 2012



Mutually enriching

Malaysia's former Foreign Minister YM Tengku Tan Sri Dato' Seri Ahmad Rithauddeen, says the MoU and the realisation of the MTJA marks a great achievement for both countries in addressing the issue of overlapping claims. He was the first Co-chairman of the MTJA together with Thailand's HE M.R. Kasem Samosorn Kasemsri.

Although the two Governments have not yet arrived at any satisfactory solution to their continental shelf boundary claims, Tengku Ahmad Rithauddeen says the workable model of joint development to exploit and share the hydrocarbon resources in the MTJDA is being realised.

"This is a unique approach, and one that other countries may consider as a way to resolve conflict," he adds.

MTJA Co-chairman HE Dr Kurujit Nakornthap, who was one of the pioneer members of the Joint Authority, agrees.

"The natural gas extracted reinforces the economic interdependence of both countries. Natural gas is a commodity that is important to energy security and it must be exploited," he adds.

Dr Kurujit, who served as the MTJA's third Chief Executive Officer (2000-2004), adds that the successful exploitation and subsequent utilisation of the gas resources have improved the standard of living in both countries.

"Millions may not have thought that this was an important project but their lives have changed because of it," he says, pointing to the jobs that were created as a result of the exploration activities and through the growth of supporting industries such as logistics and fabrication.

"In the 40 years since the signing of the MoU both countries have grown and developed. Malaysia for example, has grown from a population of 15 million then to 28 million today, and Thailand's population has grown from 40 million to 67 million.

"The resources extracted from the MTJDA are important in meeting the energy needs of the respective countries," he adds.

The benefits reaped over the years prove that well executed partnerships can truly be mutually enriching. Such a partnership however, would not have been possible without a shared history, mutual trust and acknowledgement that both countries have a role to play in the enrichment of each other's future.

What is equally certain is the fact that such a development model would not have been possible without the foresight displayed by the leaders of the two countries.

It took a lot to get where we are today.

Coming from a place of strength

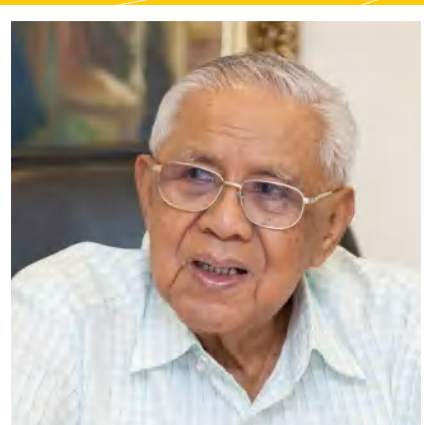
Malaysia and Thailand celebrated 61 years of diplomatic relations on 31 August 2018. However, their social, cultural and economic ties can be traced back across several centuries.

The people of Thailand's southern provinces – Yala, Narathiwat and Pattani – share strong ethnic, religious, linguistic and cultural bonds with the people in the Malaysian states of Kelantan, Perak, Perlis and Kedah.

Both countries have also been significant trading partners. Awareness among Thai companies about the Malaysian market has been growing and many Malaysian companies are investing in Thailand, especially in the southern region, in the areas of franchising, small and medium businesses and food processing.

Malaysia and Thailand – along with Indonesia, Singapore and the Philippines – are also founding members of the Association of Southeast Asian Nations (ASEAN), regarded by many as one of the most successful examples of regional cooperation in the developing world.

Their shared belief in ASEAN and the adoption of the ASEAN Way in bilateral and multilateral negotiations were instrumental in arriving at the decision that resulted in the MTJDA.



From left:
YM Tengku Tan Sri
Dato' Seri Ahmad
Rithauddeen, HE M.R.
Kasem Samosorn
Kasemsri and HE Dr
Kurujit Nakornthap

Overlapping claims and the search for oil

The development and evolution of international laws such as the 1958 Geneva Convention on the Continental Shelf and the 1982 United Nations Convention on the Law of the Sea (UNCLOS), allowed countries with coastal areas to extend their claims on maritime, continental shelf and exclusive economic zones further away from the shores in order to stake their sovereign rights to exploit natural resources lying within those offshore areas.

It is recognised that the 21st century will continue to be a century of maritime delimitation settlement.

The Gulf of Thailand and the South China Sea as a whole, are characterised by overlapping claimed areas. In the case of Malaysia and Thailand, the overlapping continental shelf claims were caused by conflicts in the delimitation of the continental shelf boundary.

In 1972, both countries were able to agree on a continental shelf boundary in the south western part of the Gulf of Thailand.

Nearly four decades on, Ko Losin is still a name that Tengku Ahmad Rithauddeen remembers.

"It was a tough time... but because Malaysia and Thailand are close neighbours with a long historical bond of friendship, the two countries decided to resolve the conflicting boundary claims amicably through diplomatic negotiation," he says.

These claims were made more apparent as a result of offshore exploration activities in the Gulf of Thailand, undertaken by both Malaysia and Thailand. In the 1960s, advancement in offshore exploration technologies prompted foreign oil companies to look for offshore exploration acreages.

In 1968, Esso Production Malaysia Inc (EPMI) signed a petroleum agreement with the Malaysian Government – it obtained a concession area located in the north, off the East Coast of Peninsular Malaysia, adjacent to the Thai boundary.

Later in 1971, EPMI drilled one exploration well, Piling-1, in the area that was later declared to be overlapping with Thailand's continental shelf claim.

In 1974, the Malaysian Government passed the Petroleum Development Act, through which it vested all the country's petroleum resources in a wholly owned Government company called PETRONAS, which would enter into production sharing contracts (PSCs) with other petroleum companies to explore and develop Malaysian acreages.

EPMI, in 1976, signed a PSC with PETRONAS and subsequently in 1976 relinquished a major part of its remaining contract area to the latter. However, EPMI retained Piling.

In 1980, following negotiations between PETRONAS and EPMI, the rights to the Piling area that overlapped with Thailand's continental shelf claim were transferred to PETRONAS Carigali Sdn Bhd, the national oil company's exploration and production subsidiary.



Over on the Thai side, exploration activities began as early as 1968 when the Thai Government first announced the delineation of 19 offshore exploration blocks in the Gulf of Thailand.

Six foreign oil companies were then awarded special concession licences under the Mining Act, which later became petroleum concessions under the Petroleum Act in 1971.

In 1972, petroleum concession rights in the southernmost offshore Blocks 16 and 17 were awarded to BP Petroleum Development Co Ltd while Blocks 18 and 19 were awarded to Triton Oil Company of Thailand.

The eastern portions of all the four blocks awarded were at the southern limit of Thailand's continental shelf boundary claim that was later found to be overlapping with Malaysia's continental shelf boundary claim.

During that time, exploration works were carried out by the two concessionaires with one exploration well, 17-B-1 drilled in the overlapping area in 1976 by BP's farm-out successor Texas Pacific.

Meanwhile, Triton Oil had also identified potential drilling prospects in its Block-18 area but was denied permission to drill by the Thai Government pending a resolution of the boundary issue with Malaysia.

Finding a win-win solution

“Towards the end of 1976, the issue of overlapping continental shelf claims became more apparent,” says Tengku Ahmad Rithauddeen. “Officials from the two countries met several times to solve the boundary disputes,” he adds.

In 1978, the two Governments agreed to suspend all exploration activities of their respective concessionaires and contractors in the area of overlapping claims until a resolution was found. But by mid-1978, talks seemed to reach an impasse.

“Officials from Malaysia and Thailand concluded that there were substantial differences between the claims of both countries, and further talks were unlikely to produce an acceptable line of the common continental shelf boundary,” says Tengku Ahmad Rithauddeen.

Dr Kurujit adds that when the issue was raised to the political level, both countries had to think of a solution to overcome the impasse.

“Given our close and friendly ties, we picked the path of negotiation as opposed to having a third party to mediate the issue,” he says.

Enter then the man who had the necessary foresight to steer the two countries to a path of mutual cooperation – the late Tun Muhammad Ghazali Shafie, who was Malaysia’s Minister of Home Affairs from 1973 to 1981.

In a meeting with the Thai Prime Minister General Kriangsak Chomanan, Ghazali proposed the two countries work together through a joint authority to explore and exploit the resources in the area of overlapping claims (see “Brothers Drinking From The Same Well”).

It was a proposition that received a thumbs up from both sides of the border.

“Why bicker over something when there was a practical solution? After all, as long as the area remained an overlapping area either side could not unilaterally undertake petroleum exploration and development activity... it was essentially a no-man’s land and was of no use to anyone,” says Dr Kurujit.

Former Attorney-General Tan Sri Abu Talib Othman, whose office played a role in the crafting of the Joint Authority’s constitution in the years following the signing of the MoU, says: “The claim over sovereignty would take a long time to resolve so both countries decided that in the meantime we would work together to jointly develop the area and share the benefits of exploration and development.”



Management of MTJA with Prime Minister of Thailand HE Mr Chuan Leekpai



From top: Board Members greeting Prime Minister of Thailand HE Mr Chuan Leekpai

Tun Muhammed Ghazali Shafie warmly greeting Thai Prime Minister General Kriangsak Chomanan

PRINCIPLES OF THE JOINT AUTHORITY AND THE 1979 MOU

The Memorandum of Understanding (MoU) after being ratified by both Governments came into force on 24 October 1979. From this date the Joint Authority known as the Malaysia-Thailand Joint Authority (MTJA) would assume all rights and responsibilities on behalf of both Governments for the exploration and exploitation of the non-living natural resources in the joint development area for a period of 50 years.

The underlying principles of the Joint Authority as specified in the MoU include the following:

- The MTJA shall be established for the purpose of the exploration and exploitation of non-living natural resources in the joint development area. The issue of living resources (such as fishery) is excluded from the agreement.

- The MTJA shall assume all rights and responsibilities on behalf of the Governments for the exploration and exploitation of the non-living natural resources in the joint development area and also

for the development, control and administration of the joint development area. The assumption of such rights and responsibilities shall in no way affect or curtail the validity of concessions issues or agreements made by either Government prior to the MoU.

- The MTJA shall comprise two joint-chairpersons, one from each country, and the Board will comprise an equal number of members from each country.

- The MTJA shall exercise on behalf of both Governments all the powers necessary for the discharge of its functions relating to the exploration and exploitation of the non-living natural resources in the joint development area.

- All costs incurred and benefits derived by the MTJA from activities carried out in the joint development area shall be equally borne and shared by both countries; and,

- If any petroleum field extends beyond the boundary limit of the joint development area into

either country, MTJA and the country concerned shall communicate to each other and shall seek to reach agreement as to the manner in which the field will be most effectively exploited; and all expenses incurred and benefits derived shall be equitably shared.

In addition, the MoU also outlines an arbitrary line for the purpose of dividing and administering criminal jurisdiction of Malaysia and Thailand over the joint development area.

Recognising that this joint development is merely an option and not a final solution, the MoU also provides that if the two Governments can arrive at a satisfactory conclusion to the continental shelf boundary before the expiry of the 50-year period, the MTJA shall cease to exist and be wound up. But, if no satisfactory solution is found, then the existing MTJA arrangement shall continue beyond the expiry of the 50-year period.





BROTHERS DRINKING FROM THE SAME WELL

The late Tun Muhammad Ghazali Shafie played a game-changing role in the overlapping continental shelf deliberations. Malaysia's Minister of Home Affairs from 1973 to 1981, it was Ghazali who in a meeting with Thai Prime Minister General Kriangsak Chomanan mooted the idea of the two countries working together to exploit the hydrocarbon resources in the area.

"In proposing the idea of a 50:50 partnership, Ghazali was very much guided by the spirit of ASEAN," said former Attorney-General Tan Sri Abu Talib Othman.

Malaysia and Thailand did not just have a historical relationship that went back several centuries – in the modern day context the two neighbouring countries were also founding members of ASEAN.

In an interview coinciding with the 40th anniversary of ASEAN, Ghazali,

who was also Minister of Foreign Affairs for three years from 1981, recalled the events that led to the idea of the Malaysia-Thailand Joint Development Area and the Joint Authority. *

The anecdotes he shared are illuminating and speak to the importance of mutual respect, goodwill and brotherhood – the hallmarks of the ASEAN spirit.

"For almost a year, both sides couldn't agree at the official level. Because of the ASEAN spirit and state of mind, I was called by the Prime Minister (Tun Hussein Onn) to resolve the problem. I went to Bangkok and met the (Thai) Prime Minister General Kriangsak Chomanan and the Home Minister.

"As we were sipping tea, I told the Prime Minister: 'Why don't we drink from the same well?' Just like that. He threw a pencil and a piece



Ghazali, in the same interview, recalled the Thai Prime Minister requesting that his Malaysian counterpart Tun Hussein Onn go to Thailand to sign the MoU.

"As soon as Tun Hussein arrived, the Thai Prime Minister suggested we go to Chiangmai. So we went. We arranged for the signing at 11 am the next day.

"On the morning of the signing, my Prime Minister wanted to see the (local ruins). So we went around. Then his car stopped in front of the Chiangmai University.

"I thought the two Prime Ministers wanted to see the university. But they crossed the road and went to this little tuckshop. The Thai Prime Minister had said this beef *kuey teow* noodle shop was the best in the whole of Thailand. My Prime Minister said he wanted to try."

While everyone in the delegation stopped and ordered the noodles, Ghazali became restless.

"The Thai Prime Minister noticed and asked what was the matter. I said the signing was to be at 11am. He asked if I had a copy; I had the original. He took out his pen and signed it. My Prime Minister signed it also.

"Here was a very important agreement, which established a very important cooperative programme, signed in a *kuey teow* shop, without pomp and ceremony. That's the spirit of ASEAN I'm talking about."

* Being There: An ASEAN architect looks back and ahead, Asiaweek.com

of paper across to me and said, 'Write down what you think.'

"So I put down what was regarded as the new policy using the ASEAN thinking: Let us exploit this area together, 50:50. It would be an authority, jointly owned."

Ghazali then got Kuala Lumpur on the phone and obtained the green light to proceed with the ground-breaking proposal. The same night, the Thais brought it to their cabinet, which also approved the plan.

The spirit of brotherhood so apparent within the walls of ASEAN was further demonstrated in 1979 when the Prime Ministers of both countries met for the signing of the historic Memorandum of Understanding (MoU) that paved the way for the establishment of the MTJDA.

Trust, mutual respect and brotherhood

Dr Kurujit says the solidarity and goodwill displayed by the leaders who mooted the idea of the joint development model were crucial success factors. And that these attributes are enshrined in the spirit of ASEAN is also instructive.

After all, the first set of norms to emerge in ASEAN were embedded in an agreement among its members to refrain from the use of force to resolve interstate disputes.

Many scholars believe that the ASEAN Way – described as "a decision-making process that features a high degree of consultation and consensus based on discreteness, informality, consensus building and non-confrontational bargaining styles" – was instrumental in the establishment of the MTJA.

At the same time, the first CEO of the MTJA, Charu-Udom Ruangsuvan, believes that trust among those who initiated the idea of the Joint Authority and the two Prime Ministers at the time was just as fundamental to the success of the joint development.

"Without General Kriangsak and Tun Hussein, there would not have been the pregnancy that led to the birth of the MTJA," says this elder statesman who was the Deputy Permanent Secretary to the Ministry of Industry prior to his appointment to the MTJA in 1992.

Indeed, many of the pioneer members of the Joint Authority share this sentiment. But much as trust is vital to a partnership, Dr Kurujit points out that trust was something that was hard fought and had to be earned.

"It's not a fairy tale story. Much like a marriage, in the beginning you may not trust each other... so you have to work at it," he says candidly, adding that there was a lot of compromise on both sides. "It took a lot of people to make this work."

Tengku Ahmad Rithauddeen also believes that patience was a necessary characteristic, as was the ability to rationalise.

"That is why at the end of the day rational and intelligent thinking paved the way towards the setting up of the Joint Authority," he points out.

Dr Kurujit asserts that beyond the successful exploitation of the rich hydrocarbon resources, the joint development model reinforces the fact that problems can be solved if you have the will to solve them.

"It is therefore important to know your roots and history because if you do not nurture the relationship, it becomes cold and you may lose focus on the prize," he concludes.

The path towards the creation of the Joint Authority was indeed a challenging one. It was the determination and perseverance displayed in those early years, that proved crucial in transforming vision to reality.

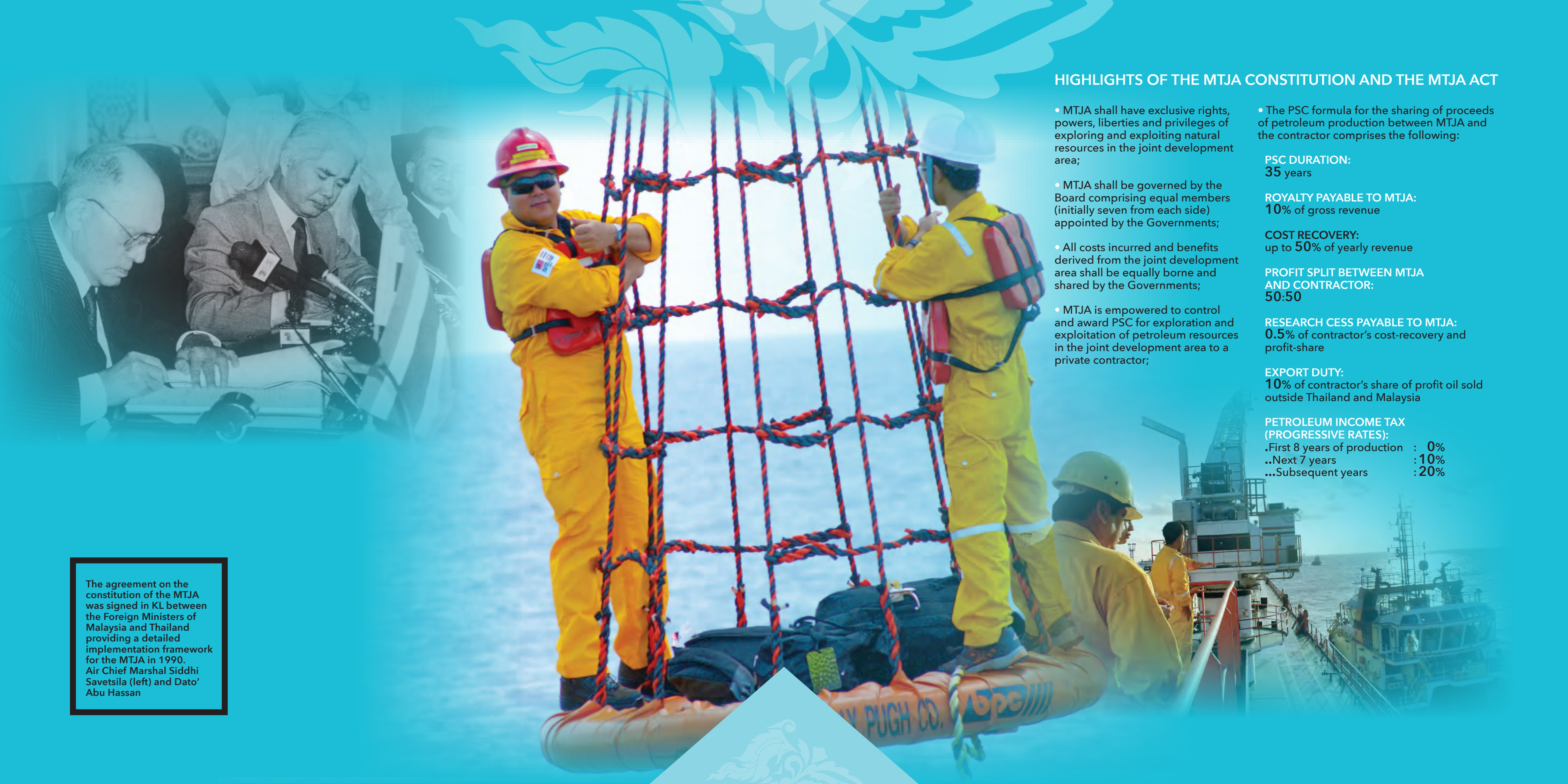
"For over four decades, the MTJA has led a partnership that has delivered prosperity for the peoples of the Kingdom of Thailand and Malaysia. Its success has been underpinned by a solid foundation of mutual trust and hard work. Hess extends its congratulations to the MTJA and may this partnership continue to enjoy great success in the many years ahead."

ZHAO ZHIYONG
VICE PRESIDENT, ASIA, HESS OIL COMPANY OF THAILAND (JDA) LIMITED



WORKING TOGETHER... FOR MUTUAL BENEFIT

Many Thai and Malaysian officials had to work together to lay the groundwork for the establishment of the MTJA. Theirs are stories of commitment, trust, perseverance and optimism.



HIGHLIGHTS OF THE MTJA CONSTITUTION AND THE MTJA ACT

• MTJA shall have exclusive rights, powers, liberties and privileges of exploring and exploiting natural resources in the joint development area;

• MTJA shall be governed by the Board comprising equal members (initially seven from each side) appointed by the Governments;

• All costs incurred and benefits derived from the joint development area shall be equally borne and shared by the Governments;

• MTJA is empowered to control and award PSC for exploration and exploitation of petroleum resources in the joint development area to a private contractor;

• The PSC formula for the sharing of proceeds of petroleum production between MTJA and the contractor comprises the following:

PSC DURATION:
35 years

ROYALTY PAYABLE TO MTJA:
10% of gross revenue

COST RECOVERY:
up to 50% of yearly revenue

PROFIT SPLIT BETWEEN MTJA AND CONTRACTOR:
50:50

RESEARCH CESS PAYABLE TO MTJA:
0.5% of contractor's cost-recovery and profit-share

EXPORT DUTY:
10% of contractor's share of profit oil sold outside Thailand and Malaysia

PETROLEUM INCOME TAX (PROGRESSIVE RATES):
..First 8 years of production : 0%
..Next 7 years : 10%
...Subsequent years : 20%

The agreement on the constitution of the MTJA was signed in KL between the Foreign Ministers of Malaysia and Thailand providing a detailed implementation framework for the MTJA in 1990. Air Chief Marshal Siddhi Savetsila (left) and Dato' Abu Hassan





Tun Hussein Onn (left) and General Kriangsak Chomanan sign the historic MoU on 21 February 1979



"It was the longest pregnancy. The two Governments only signed the Agreement on the Constitution and other matters relating to the establishment of MTJA in 1990." Charu-Udom Ruangsuwan

A celebratory mood filled the air following the signing of the Memorandum of Understanding (MoU) between Malaysia's Prime Minister Tun Hussein Onn and Thailand's Prime Minister General Kriangsak Chomanan on 21 February 1979.

The exultant atmosphere was understandable given that the two neighbours had, for the last seven years or so, been involved in negotiations and discussions to resolve the issue of their overlapping claims in the Gulf of Thailand.

As significant as it was, the MoU was recognised as an expression of intent. It did not provide a detailed framework as to how the oil and gas resources would be exploited. It was apparent that a further agreement was needed; this would require more discussion and negotiations.

It was, as MTJA's first Chief Executive Officer, Charu-Udom Ruangsuwan, puts it, "the longest pregnancy". The two Governments only signed the Agreement on the Constitution and other matters relating to the establishment of MTJA in 1990. It would be a further two years before the Joint Authority was up and running.

Political, legislative and even to an extent, cultural differences between the two countries contributed to the lengthy process of establishing the Joint Authority. It involved many individuals, working in concert and towards a common goal.

Their recollections, anecdotes and stories of those "pregnancy years" speak volumes of the commitment of both Governments.

Getting down to business

The Malaysian and Thai Governments established a joint committee in early 1980. Its main task was to come up with a workable and practical arrangement for the actual functioning of the MTJA. This would be embodied in the MTJA Constitution which was to be drafted together with its enabling domestic legislations. Datuk Harun Ariffin, a senior officer in the Prime Minister's Department and Dr Prapart Chakaphrt, headed the committee.

Several sub-committees were created to handle the wide array of issues including amendments to tax and customs regulations, drafting of a model contractual agreement for use by the Joint Authority to enter into contracts with oil companies working in the joint development area, as well as the organisation and budget for the MTJA.

Translating the MoU into action was a major challenge as HE Dr Kurujit Nakornthap, current Co-chair and pioneer member of MTJA, who was involved in the negotiations to establish the MTJA, points out.

"The MoU was in itself a short statement of the vision of the leaders of both countries. Transforming that vision into action was left in the hands of government officers who perhaps did not have the necessary foresight," he says.



The MoU was in itself a short statement of the vision of the leaders of both countries. Transforming that vision into action was left in the hands of government officers who perhaps did not have the necessary foresight. HE Dr Kurujit Nakornthap

That there were sceptics on both sides of the border also did not augur well for the negotiations. Several key issues were raised, says former Attorney-General Tan Sri Abu Talib Othman.

"How are you going to manage one area jointly when the two countries involved had different systems, rules and regulations and politics?"

"Meetings were held often to discuss what system should be adopted, and at all times we had to conduct ourselves in a way that would not compromise our rights of sovereignty over the area of overlapping claims," he adds.

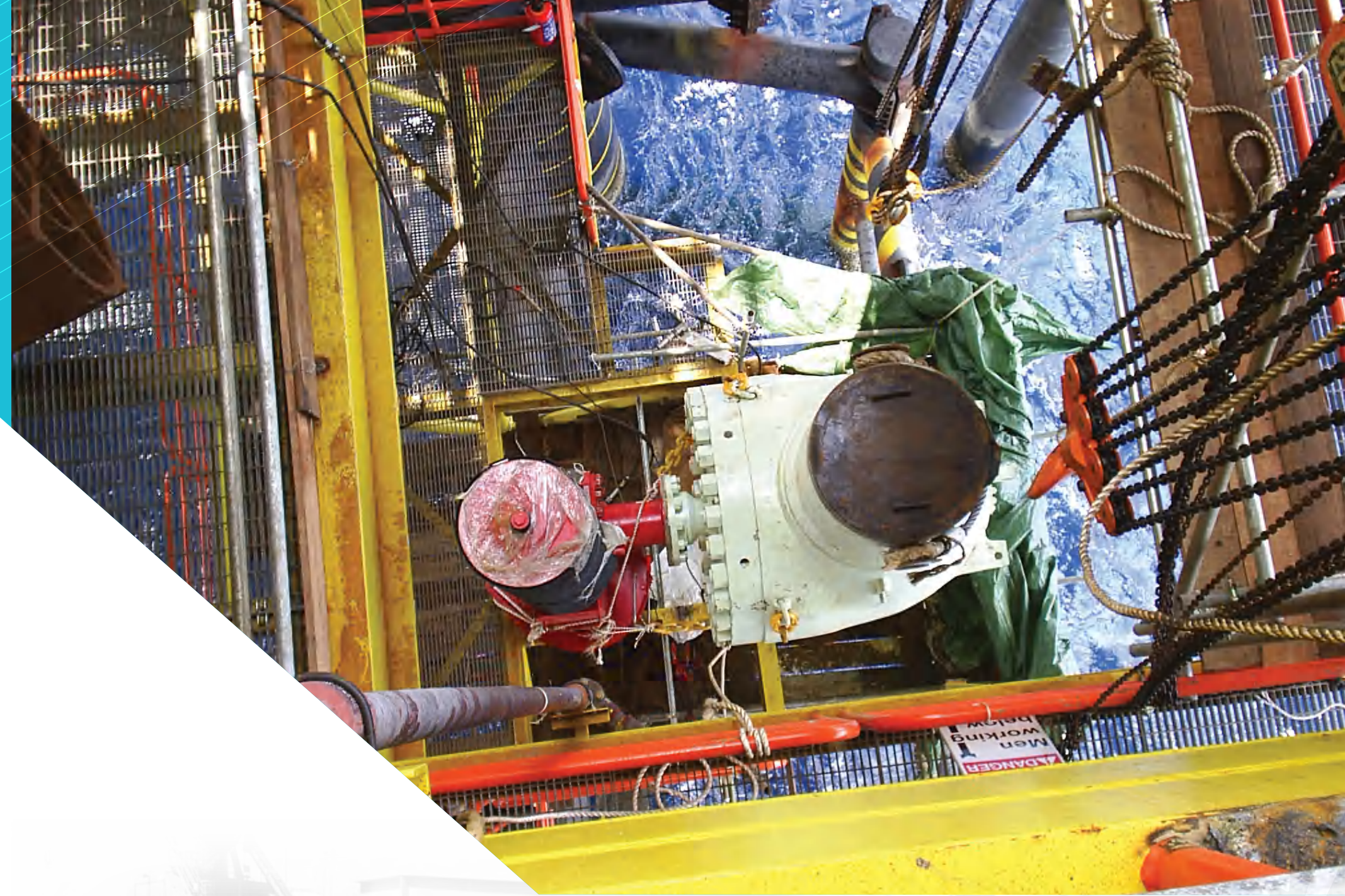
In order for the Joint Authority to assume all the rights and responsibilities on behalf of both Governments for the exploration and exploitation of the non-living resources within the joint development area, a common legal system, amendments in domestic legislation, as well as a degree of harmonisation were required.

The Attorney-General's Chambers came up with the solution: both countries should enact identical legislation for the establishment of the Joint Authority.

Equally unique was the fact that the implementing law of one country had to come into force at the same time as the identical legislation of the other country.



Meetings were held often to discuss what system should be adopted, and at all times we had to conduct ourselves in a way that would not compromise our rights of sovereignty over the area of overlapping claims. Tan Sri Abu Talib Othman





The framework for contracts

Contributing to the complexity and delay, were the great differences in the two countries' legal framework regarding the exploitation and sharing of benefits from petroleum resources.

In Malaysia, a national oil company, PETRONAS, had been established in 1974 and it was accorded unequivocal rights for all petroleum activities and powers of licensing.

PETRONAS adopted the PSC system that required the use of detailed contract documents, which covered methods and control (managing and approving) of all contractors' operations. However, the PSC system had never been used in Thailand, which instead adopted the royalty-tax concession system.

It had already been agreed that the three divisional blocks that had previously existed (A-18, B-17 and C-19) would be maintained under the joint development area agreement.

Malaysia wanted to adopt the PSC system for the joint development area. This would mean that licensing powers need not be retained by the Governments and could be delegated to the Joint Authority.

Thailand, however, had rarely established authority beyond direct ministerial control and was somewhat cautious about giving such extensive powers to the Joint Authority.

As such it was unsurprising that negotiating the extent of licensing powers to be delegated to the Joint Authority was a long-drawn-out process.

The formative phase of the Joint Authority is a period Ir Mohamed Zohari Shaharun remembers vividly, even to this day.

His involvement in the MTJA joint committee began at the end of 1985 when he was called in to provide technical

support to members of the Malaysian working committee, principally to come up with a licensing framework for the Joint Authority to enter into contracts with multinational oil companies.

At the time Mohamed Zohari was the General Manager of Exploration and Production Division in PETRONAS. The former Dean of the Faculty of Mechanical Engineering at University Technology Malaysia had been with the national oil company since late 1979 when he was seconded to PETRONAS Carigali, the former's exploration and production subsidiary.

A major challenge relating to the proposal of a licensing framework was the status of pre-existing rights in the joint development area.

When the joint development area was declared and the establishment of the Joint Authority was proposed, Texas Pacific Thailand and Triton Oil Company of Thailand cried foul. Both held concessions within the area, already given by the Thai government.

Malaysia wanted the concession agreements redrawn in conformity with Malaysian laws, which allow concessions only on production sharing terms.

Well into 1986 – seven years after the signing of the MoU – the two American oil companies stood firm, formally rejecting proposals for joint operations to exploit resources in the overlapping area.

News reports at the time said that both companies wanted the Thai government to honour the concessions that had been given to them.

While Texas Pacific's concession was later taken over by PTT Exploration and Production International Ltd (PTTEPI), the Thai state company, Triton maintained its rights in Block A-18, which overlapped the PETRONAS acreage.

The three-area concept

In the end, a proposal called the “three-area concept” became the focus for deliberation by the MTJA working committee.

“Under this proposal, Blocks B-17 and C-19, would be awarded on a 50:50 basis to PETRONAS and PTTEPI,” explains Mohamed Zohari.

“The two national oil companies would determine an arrangement with the MTJA for the commercial exploitation of hydrocarbon resources in their blocks.”

Meanwhile, Block A-18 was proposed to be split into two parts, one to be retained and solely developed by Triton, and the other to be developed by PETRONAS.

Triton’s part of A-18 would be developed using Thailand’s concession system with the MTJA, and the joint PETRONAS-Triton portion of A-18 would use the PSC system with the MTJA for its development.

“In essence the proposal would meet Triton’s demand and dissuade the company from staking its claim either with Thailand or the MTJA through legal means. Members of the Thai working committee were also concerned with the issue of the sanctity of prior contractual rights of the Thai petroleum concessionaires, who had legal rights to their claims in these concession blocks as well,” explains Mohamed Zohari.

At the same time, Malaysia also did not want the MTJA put in a position where it would be liable for any breach of existing contracts.

“As a follow up to the “three-area concept” proposal, PETRONAS took the initiative to explain, to both PTTEPI officers and those of the Department of Mineral Resources, the various aspects of the PSC regimes, and fiscal benefits that both countries could gain, as compared with the concession system.



“Thailand was using the concession system, so they were less familiar with the PSC system of PETRONAS.

“Unless efforts were made to introduce the concept of the PSC system to the Thai officers, Malaysia would not be able to influence their views about additional benefits that both countries may derive from the joint development activities.

“Under the PSC system, the MTJA as manager, planner and approving entity for all activities of petroleum operations would be much more effective in meeting the Governments’ aspirations rather than being a mere tax and/or royalty collector.

“These were among the matters deliberated at length with our counterparts to help them better understand Malaysia’s position,” he adds.

Finally in July 1989, at the eleventh meeting of the MTJA Plenary Committee in Bangkok, it was agreed that a new fiscal regime – derived from the hybrid of the concession system and the PSC system – would be applied for all joint development acreages. Subsequently in November 1989, both Governments approved the PSC model. Following continued negotiations between all the parties involved, in particular Triton, it was agreed that the joint development area would be divided into two contract areas.

The potential PSC licensees or investors were identified by the MTJA as Triton and PETRONAS Carigali for Block A-18 with each having a 50% interest in the block, and PTTEPI and PETRONAS Carigali for Blocks B-17 and C-19 with each having 50% interest in the blocks. The actual drafting of the PSC for use by the MTJA took about a year from March 1991 to February 1992 as both parties had to come to terms with all the definitions and possible interpretation for eventual application.

“It would have been much longer had it not been for PETRONAS’ earlier efforts to assist our Thai counterparts with the PSC issues,” says Mohamed Zohari.

Political will and bilateral relations

It has been suggested over the years that the delay in establishing the MTJA was due to a lack of political will, arguably attributed by the fact that the prime ministers who had signed the MoU back in 1979 were no longer in office.

Not discounting the fact that the pace of negotiations in the early years was slow, HE Mr Nopadon Mantajit, former MTJA Co-chairman, says that political will never wavered. The slow pace of negotiations in the early years was due to the complexity of the issues involved.

"We had to solve legal and taxation issues, and the terms and conditions related to exploration and production... it was not easy," says Nopadon who was at the time a member of the joint committee secretariat.

That both countries were committed to realising what was set out in the 1979 MoU was apparent, he points out, in the choice of the people appointed to the joint committee.

"Both sides selected potential Co-chairs that could work together, who understood the MoU and the task ahead," he says of the selection of Datuk Harun Ariffin and Dr Prapart Chakaphrt.

This desire to realise the vision of the Authority's founding fathers was palpable to all those involved. Beyond wisdom and maturity, Abu Talib believes that the "desire to make it happen" was a major driving force.

And in the then Malaysian Prime Minister Tun Dr Mahathir Mohamad, the Joint Authority found its champion.

"Tun Mahathir saw different phases of the MTJA's development, he knew what was the joint development area and he was fond of the joint development concept. As a result, he was courageous and patient with the project," says Dr Kurujit.

What's more, contrary to observations that disputes over fishing rights in the mid-to-late 1980s had a detrimental effect on the Malaysia-Thailand relationship, those who played an active role during the years leading up to the establishment of the MTJA, say that bilateral relations were never better.

"Bilateral relations were excellent," asserts Abu Talib, adding that the leaders of both countries were committed to jointly developing the area of overlapping claims in the spirit of ASEAN.

"Whenever there were disagreements, we would talk things through. The problems and issues that arose were man-made so there was no question that man could not resolve them, even if there were delays," he adds.

Managing the disagreements required a deft hand. Respect was essential, as was maintaining cordial relationships.

Visith Noiphan who was the Co-chairman of the joint committee from 1989 to 1991, says that negotiations were kept semi-formal so as to create a constructive atmosphere.

"When we talked, we tried to understand each other's needs, and see how and where we could meet and agree," he adds.

And if the issues could not be resolved in the boardroom, then the path to resolution could be found through a friendly game of golf. "It was a kind of golf diplomacy," quips Abu Talib.

Despite the frustrations caused by the protracted negotiations, those involved say a sense of optimism prevailed.

"There were times when there seemed to be no end to the process, and probably no closure at the end... but there was a sense of optimism," says Mohamed Zohari.

"We knew we were creating history so that motivated us," says Tan Sri Abi Musa Asa'ari Mohamed Nor, who was the Co-Secretary of the MTJA joint committee.



Above
1994, Thailand Prime Minister, HE Mr Chuan Leekpai and Malaysian Prime Minister, Tun Dr Mahathir Mohamad, at the official opening ceremony of the MTJA office



Below
Prime Ministers of Malaysia & Thailand witness the signing of production sharing contracts for Blocks A-18, B-17 & C-19

Light at the end of the tunnel

And in the end that sense of perseverance and optimism triumphed – both sides found common ground and succeeded in resolving the issues that had stood in the way of the establishment of the Joint Authority.

In February 1990, following the twelfth meeting of the Plenary Committee in Langkawi, the Co-chairmen Zainol Mahmood and Visith Noiphan, announced that most of the details of the agreement for the joint exploration of the area had been finalised – paving the way for the formal establishment of the MTJA.

For Zainol and Visith, the successful conclusion of the negotiations – which had taken more than a decade and involved countless government officers – remains one of the highlights of their careers in civil service.

Visith who was then the Director-General of Thailand's Department of Mineral Resources, says the role he played in the establishment of the MTJA – which he hopes serves as a model for other countries mired in the issue of overlapping claims – remains one of the bright spots of his career.

On May 30th 1990, the Foreign Ministers of Malaysia and Thailand, Dato' Abu Hassan Omar and Air Chief Marshal Siddhi Savetsila signed the Agreement on the Constitution and other matters relating to the establishment of the Malaysia-Thailand Joint Authority (MTJA) in Kuala Lumpur.

The implementing legislation was passed by the Malaysian parliament in June 1990 and by the Thai parliament in July 1990.

On 21 January 1991, the MTJA Agreement was ratified in Bangkok and the Malaysia-Thailand Joint Authority Act 1990 and the Thailand-Malaysia Joint Authority Act B.E. 2533 were simultaneously promulgated and came into force in Malaysia and Thailand – thus formally establishing the MTJA as a statutory body with juristic personality in both countries.

In December 1991, both the Malaysian and Thai Governments endorsed the organisational structure of the MTJA. The two Governments appointed their respective Co-chairmen and members of the MTJA in February 1992.

The pioneer MTJA Board was headed by the Co-chairmen, Tengku Tan Sri Ahmad Rithauddeen Tengku Ismail and HE M.R. Kasem Samosorn Kasemsri.

The first meeting of the MTJA agreed, with the nod from both Governments, to set up the MTJA head office in Kuala Lumpur.

In October 1992 the Co-chairmen, with the approval of both Governments appointed the first CEO, Charu-Udom Ruangsuvan and Deputy CEO, Ismail Sulaiman, each serving a four-year term.

This marked the beginning of the MTJA and the rest, as they say, is history.



KEY MILESTONES (1980-1992)

February 1980 – June 1989
Joint committees comprising senior government officials from both countries meet and discuss the requirements for the establishment of the MTJA.

July 1989
The 11th Meeting of the MTJA Plenary Committee in Bangkok agrees to a PSC model to be applied to the joint development area.

November 1989
Both Governments approve the PSC model.

May 1990
The Agreements between the Government of the Kingdom of Thailand and the Government of Malaysia on the Constitution and Other Matters Relating to the Establishment of the Malaysia-Thailand Joint Authority (MTJA Agreement) is signed in Kuala Lumpur.

January 1991
The MTJA Agreement is ratified. The Malaysia-Thailand Joint Authority Act 1990 and the Thailand-Malaysia Joint Authority Act B.E. 2533 are simultaneously entered into force in Malaysia and Thailand respectively, thus officially establishing the MTJA.

December 1991
Both Governments endorse the organisational structure of the MTJA which comprises a CEO, Deputy CEO and three Departments (Exploration, Legal, and Accounts and Finance).

March 1991 – February 1992
Technical Committee comprising officials of the two countries drafts a PSC for negotiation with potential contractors of MTJA.

February 1992
Co-chairmen and Members of the MTJA appointed. Works of the joint committee handed over to the new members.

August 1992
First meeting of the Co-chairmen in Kuala Lumpur.

September 1992
The first meeting of the MTJA agrees to set up office in Kuala Lumpur, and it also adopts the text of the draft PSC as basis for negotiations with potential contractors in the respective blocks of the joint development area.

October 1992
The MTJA Co-chairmen appoint CEO and Deputy CEO for a four-year term.

4

STAYING TOGETHER... A SUCCESSFUL PARTNERSHIP

Unity of purpose and action has defined the leadership approach of the MTJA and helped address the many challenges.

"As Malaysia and Thailand commemorate 40 years of partnership in the shared development of their energy resources, Carigali-Hess wishes to pay tribute to the MTJA for successfully taking the Joint Development Area to a position of strength and resilience. This unique area holds world class resources that will continue to be essential in order to meet the growing energy needs of both nations."

JOAQUIN MARTINEZ, GENERAL MANAGER, CHOC







This union is like a forced marriage but that was the starting point. Nothing comes easy, especially with something of this size, but it had to be a win-win situation for both Malaysia and Thailand. Usually forced marriages don't work.

Ismail Sulaiman, MTJA's first DCEO and first Malaysian CEO

SAILAWAY CEREMONY

CUEL Fabrication Yard, Laem Chabang
THAILAND

5 February 2018



Forty years ago, Malaysia and Thailand charted a course of growth and cooperation which they believed would benefit the people of both countries. It has been an unparalleled success.

Today, the MTJA's Joint Development Area is one of the most active for natural gas exploration and production. MTJA has contributed a total of USD5 billion to each government since its inception. This has provided much-needed resources to enhance the welfare of the people of both countries. The MTJA achieved a revenue of USD10 billion in 2019.

The journey has been challenging. For the first generation of MTJA leaders, the policies and regulations were unprecedented. Therefore, common core values had to be reconciled, so that both countries were equally satisfied with the outcome.

"It was simply a matter of give and take. Even when my head was on the chopping block, I would go ahead and commit to the cause and later reconcile the differences and arguments that could arise," says Ismail Sulaiman, MTJA's first Deputy CEO and its first Malaysian CEO. He served the organisation for eight years.

Management past and present use the 1990 Agreement between the two Governments on the constitution and other matters relating to the establishment of the MTJA as their road map.

The Agreement states that the MTJA must comprise two Co-chairmen, each appointed by the respective Governments, along with an equal number of members, currently seven from each country.

As the Joint Authority controls all exploration and exploitation of non-living natural resources in the MTJDA, it is responsible for formulating all its policies.



A win-win approach

It takes great determination and a strong will to keep pace with the challenges that arise in MTJA. Charu-Udom Ruangsuvan resigned from his high-ranking post as the Deputy Permanent Secretary in Thailand's Ministry of Industry to take on the position of MTJA's first CEO in 1992.

"I wanted to liberate myself for my professional work, to be independent and to concentrate fully on my job," says the engineer who played a key advisory role in the forming of MTJA. Without the security of a job to return to in Bangkok, he was certain of his capacity to ensure fairness in acting in the interests of both countries.

During his tenure, when expectations were low and the Authority was still in the process of implementing necessary regulations and systems, Charu-Udom was most proud of having been able to get the two PSCs between MTJA and its contractors signed within 18 months.

This was in the month before two joint operating companies were set up by the operators, Carigali-Triton Operating Company (CTOC) for Block A-18 and Carigali-PTTEPI Operating Company (CPOC) as operator of Blocks B-17 and C-19.

It was also during his tenure that the first gas discoveries were confirmed in Block A-18 and Block B-17 in the respective wells of Cakerawala-1A and Muda-1. And the first two MoUs on sales and purchase of natural gas from the MTJDA were signed between MTJA and its contractors, and with its buyers PETRONAS and PTT.

"I was very lucky," reflects Charu-Udom. "I was able to work with a good team that was full of potential."

That team spirit is also what former CEO Suriyan Aphiraksatyakul has endeavoured to build.



"I couldn't run MTJA alone, so I needed to build a strong and united team." He found the office with its compartmentalised departments limiting. "Before, I just walked out of my room and was able to talk to anyone, everyone at the same time."

He created a cheerful and conducive atmosphere in the office where everyone works together to support one another.

"As a leader you need to keep the objective in mind at all times: of what benefit it will be to the two countries," he says.

Ismail Sulaiman kept an open mind and was honest with himself and everyone else. "If I could not deliver on a commitment, I'd put all my cards on the table." And he would expect the same from others, for relationships cannot be built on false impressions and empty promises.

Despite the many initial seemingly insurmountable obstacles, the early leaders successfully married the Malaysian and Thai legal, regulatory and currency systems. An integrated working structure, including a joint executive management style, encompasses staff of both countries who share responsibilities equally. Revenue is similarly divided.

"Although issues could result in differences of opinions between both sides, we were always guided by the Memorandum of Understanding," says Tan Sri Idrus Harun, Federal Court Judge of Malaysia who was previously an MTJA Board member.

"Whatever the point of contention, it had to be a win-win situation for both countries. We just had to find a meeting point and compromise. The fact that MTJA manages to operate profitably and has been in existence since 1979 proves that this model works very well," he adds.

Resolution of issues is achieved by discourse and deliberation, even though it is never easy. If the two sides have to meet every week, they do it. Until the big issue is resolved. Board members and management will go to the prime ministers of both Governments, as provided in the Agreement, only as a last resort to resolve disputes. In all of its 27 years of operation, MTJA has yet to do that.

"It took a lot of courage and commitment from both parties to make MTJA happen," declares Ismail Sulaiman, MTJA's first Deputy CEO and the first Malaysian CEO, who served the organisation for eight years.

He feels the key to success is being sincere and straightforward when engaging with all parties involved. In implementing new strategies or ideas, day-to-day operations matter, not policies. He concentrated his efforts on good communication.

The CEO and DCEO positions are almost interchangeable, so they need consensus before implementation. Even the adoption of PSCs, favoured by Malaysia, was an innovative approach to integrating the two countries' systems.

The Legacy Continues

By Dr Witsarut Thungsuntonkhun, eighth MTJA CEO from Thailand

Working as the CEO of MTJA is one of the most challenging roles in my career so far. MTJA has so many success stories. The MOU 1979 resolved the issue of the overlapping claim area between the Malaysia and Thailand without confrontation. The MTJA agreement put the collaboration on a strong footing. We have the authority to supervise the PSC, we discovered and developed the gas field, and we started the whole value chain of the JDA business which has prospered for the past 40 years. So, as the youngest CEO of MTJA, I have rather large shoes to fill and the responsibility of upholding the legacy of my predecessors.

Fortunately, being part of Gen X has given me an advantage in terms of the working relationship with my colleagues at MTJA. Many are of the same age and have a similar mindset. I also believe that we have narrowed the generation gap with our Gen Y and Gen Z colleagues. From day one as MTJA's CEO, I set my mind on being a leader who inspires and a co-worker who collaborates, not a boss who gives orders. The most important characteristic of leaders in the new millennium, I believe, is having a positive attitude because attitude is more important than talent.

The CEO of MTJA does not have a direct role in the selection of the management team. But MTJA is a unique organisation, and we make it work. We shy away from simply setting goals and KPIs, then sitting back to wait for the outcome. Instead, we create a working environment that makes it conducive for staff from the two countries to collaborate and work together constructively. We ensure that everybody is focused on the ultimate common goal - the mutual benefit of both countries.

At this point in time, it is crucial to be proactive and committed to continuing the legacy of MTJA. I strongly believe we must adopt improved processes that allow us to work more efficiently. We have already implemented several improvements to our Standard Operation Procedure (SOP), business workflow and archiving of data in a digital format.

In conclusion, if MTJA was a person, what would this person be like? I think, he would be an energetic, mature man of great experience with an irrepressible eagerness to go on. He is one of a kind and deserves to celebrate this milestone. I am honoured to lead MTJA into its fifth decade.



Leadership challenges

HE Dr Kurujit Nakornthap spent eight years with MTJA in the mid-1990s as an exploration manager, then became CEO in 2000, and is now its Co-chairman. For him, the person who leads the organisation needs to first of all put public partiality above private or personal interests.

"In this important and challenging job, they must be problem-solvers, not problem-inventors," he asserts. He has never shied away from confronting problems head-on. His priority is to solve them as soon as possible.

As staff are nominated officers from both countries, he could not choose his colleagues or recruit those whom he saw fit.

"I had to find a way to make it work with all of them without prejudice, while focussing on our common mission and vision." The goal is bigger, he says – achieving their mission instead of allowing trivial issues to take centre stage.

He also feels that since the MTJA is a small entity compared to industry giants such as PETRONAS and PTT, its leaders need to be modest.

"When you are small, you go and see the big guy. Don't wait for him to come and see you," he says.

Datuk Idrus Harun views the joint executive management style in a simple way: "With the right laws and leaders, the day-to-day operations are only a matter of formalising all that has been previously agreed upon."

Most of all, he feels strong CEOs must foster respect from their peers, board members and Co-chairmen who are all from different backgrounds and systems. They must work in a mutually respectful manner for the Authority to progress. With a collective vision and commitment, leaders must be

mindful of the different cultural norms to enable the Authority to function effectively.

HE Mr Nopadon Mantajit who was MTJA Co-chairman from 2009 to 2015, spent much of his career in a variety of senior positions within the Department of Mineral Fuels, Ministry of Energy, while serving the Thai government.

"Good leaders need to be flexible," he says. "As it is critical for all leaders to solve problems, they must be able to anticipate problems before confronting them."

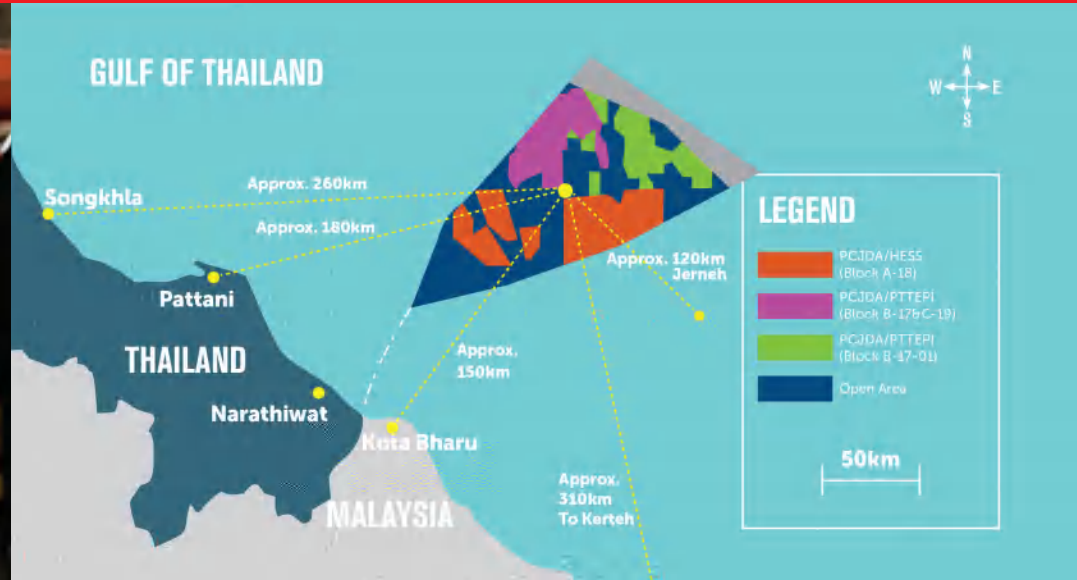
"To lead an Authority like MTJA, leaders must come with experience and maturity, and the ability to clearly explain the Authority's objective to the public as well as the MTJA members. Most importantly, they must be accountable for every decision and action," he explains.

Visith Noiphan gained vast experience in the oil and gas sector at various levels before retiring as Director-General of Industrial Works, Ministry of Industry, Thailand. He concurs with Nopadon.

"Good governance is a must," he declares. He was involved in the negotiation process after the MoU was signed, aiming to find a way to balance MTJA's demands with each nation's developmental goals, given their unique intent, challenges and priorities.

In dealing with a very sophisticated industry, with purveyors of highly efficient and advanced technologies, the CEO and DCEO positions require exceptional technical competency. A prerequisite is going through applications submitted by contractors and having the experience and expertise to evaluate what to submit to the MTJA members for approval.





In the integrated working environment required by MTJA, considerable effort goes into selecting the right people to fit the organisation. From both sides, each country's related government departments select the best person with the mandatory technical skills as well as the required knowledge – not only of the respective field, but also of the industry.

"It reflects the great significance the two countries attach to the success of MTJA in holding their partnership together. That's why both Governments emphasise the importance of the Joint Development Authority when they appoint Co-chairs and board members," says Dr Kurujit Nakornthap.

"Of crucial importance is the staff's ability to not only accommodate one another but to keep looking forward to maximise benefit from this project."

In selecting people, the emphasis is very much on a good mix of people, those who have the capacity and ability to build relationships and trust. Staff must operate on the principle of benefit to both Governments.

"This mindset is imperative to MTJA's success," says Premrutai Vinaiphath, Director, International Petroleum Division, Department of Mineral Fuels at Thailand's Ministry of Energy, a pioneer in MTJA's growth.

"In many meetings and at every board meeting, its members aim to compromise by keeping MTJA's initial vision in sight; they learn from each other to achieve those shared goals," she adds.

Ultimately, the objective is to deliver on time, in the most efficient manner, while meeting the rigorous standards of international best practice.

One of the enduring qualities on the Thai side that Ismail Sulaiman admires is their succession plans for their representatives in MTJA. He marvels at the fact that various Thai people who worked in junior positions during his tenure are now in senior positions at MTJA and in Thailand's Ministry of Energy. This, in his opinion, is crucial to ensure continuity.

Although the Thai succession plans may seem clearer, Malaysia's approach works equally well. Malaysian staff are appointed from various related government agencies and senior positions are filled by PETRONAS secondees.

Overall, the process – especially the designation of the top two positions – is equally complicated as it requires the approval of both countries' Prime Ministers.



Building relationships

In marrying the various elements that make up MTJA, relationships play a significant role in cementing this long-standing bilateral friendship that is at the core of the organisation. Even if some of these relationships are still being built on golf courses!

"The formula is there. The Agreement is clear. It is usually people who become problems," says Ismail Sulaiman. "So leaders will need to raise their maturity levels, to be open and receptive and be able to look into details and study the implications."

"Once you lose the trust of a colleague or counterpart, it is very difficult to regain it."

Ismail would frequently visit the Thai officers in Bangkok to discuss issues and pending matters. During his previous overseas assignments, he had trained himself to keep his eye on the goal and vision, without getting caught up in trivial matters.

Dr Kurujit says that everyone learns from one another and fits in well. "We are now working on an equal footing."

He recalls that the first Co-chairmen, Tengku Ahmad Rithauddeen and HE M.R. Kasem Samosorn Kasemsri, were both diplomats, schooled in the art of international relations.

"On our side, Kasem had worked with a lot of Malaysians and had plenty of Malaysian friends. He knew how Malaysians think and he respected them," he points out.

Dr Kurujit expects it was the same with Tengku Ahmad Rithauddeen. There is an established rule never to select people for the role of Co-chairman if they are known to be mistrustful and to always find fault with others.

Moreover, Dr Kurujit maintains that as a leader they must be able to listen, give and take, all without saying too much. "It is easier to make MTJA not work, rather than making it work."

It is vital to maintain relationships, especially in cross-cultural teams, which offer insights into understanding the two cultures. Every four years, along with the CEO and DCEO, a change-over in teams takes place.





HE Dr Kurujit Nakornthap, Thai Co-chairman & MTJA Management CHOC during offshore processing platform visit

Looking forward

Despite the prolonged negotiations to reach the Agreement, Datuk Idrus Harun is optimistic that a similar agreement would be possible to achieve in this day and age. He believes in the possibility of instilling the same kindred spirit of understanding and cooperation that will still work today.

"We should sell the idea. It was the first in the world and it worked," he admits proudly. Its success has a lot to do with the pioneers of this programme, for he readily acknowledges that in some other jurisdictions the territorial dispute could have easily escalated into something more fractious.

"We have to learn to share equitably, not take all. The South China Sea is filled with minerals, and the resources will be of benefit to us and add gain to the industry."

"Let's enjoy the fruits of our labour together," is his advice to other countries in the region that are currently in dispute.

Nevertheless, as Dr Kurujit contends, "Natural gas is an economic commodity that is very important to both our nations' security and, when utilised successfully, uplifts the standard of living.

"It touches so many millions of people, people I will never know and who probably do not even think of its importance. But their lives have changed because of this – in so many ways.

"For example, an oil rig worker who would otherwise be working in the Middle East now has work nearby and is able to be closer to his family. His children's education, too, would improve as he is able to pay well for it."

He certainly feels there is more to the oil and gas industry that goes beyond pure profit.



The world has surely moved on, much faster than anticipated, since the signing of the Memorandum of Understanding. The current advances in technology, communication and information, the leaders of yester-years could not have imagined. Yet the traditional values they espoused, embodied and instilled are still relevant:

1. Trust
2. Cooperation
3. Understanding
4. Compromise
5. Courage
6. Commitment



DIRECT IMPACT... **COMMUNITY COUNTS**

Sustainable development lies at the intersection
of the green and industrial revolutions.

"MTJA can be very proud of the growth and the many successes that it has achieved over the past 40 years. The determination and collective spirit of all those involved in MTJA has underpinned the growth and development of both nations and the well-being of countless people. MTJA is a shining example of how collaboration and working towards mutually beneficial goals has resulted in creating sustainable benefits to many."



VUTHIPHON THUAMPOOMNGAM
CHIEF OPERATING OFFICER, PRODUCTION ASSET AND SUPPLY CHAIN MANAGEMENT GROUP, PTTEP





In 1979, the masterplan was envisioned for 50 years – a good long time by any measure for two sovereign nations, each with its own cultural, social, political and financial identity and history.

Over time though, it became clear that there would be a future beyond the Joint Development Agreement in a rapidly changing world.

The representatives of both countries created the right framework for sustainable development embedding selected green initiatives in the short term and for the long-term, a programme for sophisticated research that they could call their own and yet be globally applicable in the oil and gas industry.

Early on, system integrity, personnel training and shared competencies kicked in so that everyone could be innovative. Technical teams developed business cycles which would ensure that the platforms recycled their waste instead of directly discharging into the sea which was worldwide practice. Produced water is reinjected into reservoirs to be used in oil and gas production.

Now, the MTJA is getting ready for the next level – a world populated by powerful consumers who are deeply interested in products which have had the least harmful environmental impact.

At the intersection of the green and industrial revolutions lies sustainable development; it is the only way forward. In part because we need to clean up as we go, but also because we need to ensure that future generations will be able to thrive and flourish in a sustainable way too.



Strategic R&D for Malaysia and Thailand

Among the fiscal terms of the MTJA Production Sharing Contract is the inclusion of a research cess to be paid by the contractors to MTJA. The PSC specifies a contribution of 0.5% of contractor's profit payable to MTJA on a monthly basis which began in 2005.

The MTJA's Research Cess Fund supports research and development in the fields of science and technology relating to the exploration and exploitation of petroleum and natural resources for the Joint Development Area (JDA). Its singular goal is that research initiatives, fundamental or advanced, be beneficial to the MTJA, the PSC operators, and to both countries.

Projects are prioritised for the needs of Malaysia and Thailand, and in particular for problems and issues pertaining to JDA operations. Research with potential for intellectual property and commercialisation is strongly encouraged as breakthrough innovations are likely to have global appeal and applications in the oil and gas industry.

Some research projects are consciously aimed at generating new uses for old things and finding connections with other industries in the search for better, environmentally friendly solutions to long-standing problems.

All projects are vetted by the Research Cess Project Council steering committee and MTJA members.



From 2014 to 2018, 15 research projects were funded by MTJA. Research proposals are chosen for their unique problem-solving approach or strategic understanding of the JDA, and the excellent credentials and track record of the scientists involved. Researchers are always university-based or in joint industry efforts with local content.

Research areas include facilities, health, safety, environment, sand production, power, sub-surface operations, and carbon dioxide.

The somewhat invisible impact of the Research Cess Fund is the generous support to talented researchers in Malaysia and Thailand that has enabled sophisticated studies in new and pioneering fields. Environmental issues and sustainability, hot on the global agenda of urgent needs, are being addressed through ongoing RCF projects.



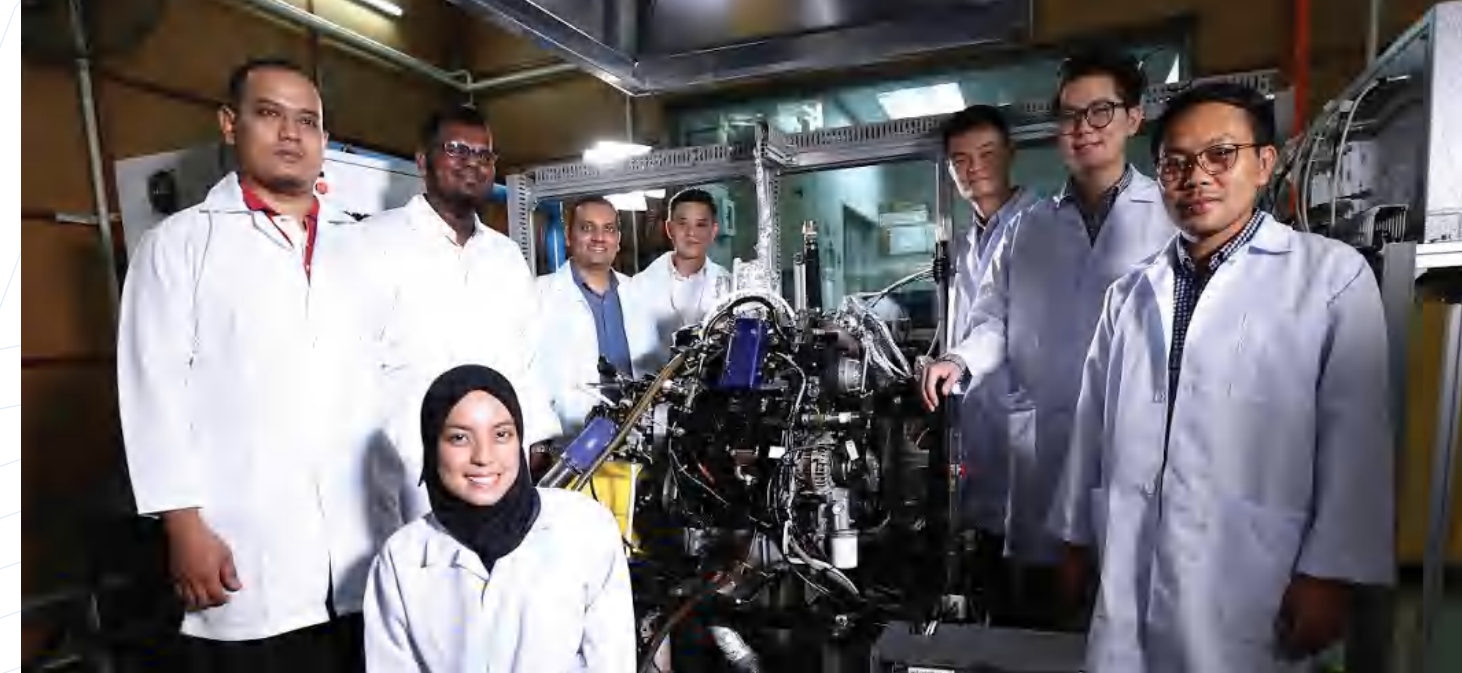
Converting CO₂ to higher value products

The release of CO₂ from petroleum processing and combustion of fossil fuels over the last few centuries has shifted the climatic equilibrium through the rapid injection of this extra 'artificial CO₂' to the natural carbon cycle. Drilling for natural gas is one of the major reasons CO₂ is released. Carbon capture and sequestration (CCS) has been proposed as a strategy to decrease accumulated CO₂. The [Chulalongkorn University](#), Thailand is studying short-term and long-term strategies to utilise CO₂ emitted during NG drilling operation in the JDA.

Conversion of CO₂ to higher-value products can be a viable alternative solution to CO₂ sequestration. In order to preserve our environment and to comply with existing regulations, developing appropriate technologies for CO₂ utilisation will mean a significant drop of CO₂ into the atmosphere. This technology will be even more important in the future when petroleum resources are depleted and carbon-based chemicals are still needed for industrial and manufacturing purposes.

Purifying natural gas using nano-materials

The [Ramkhamhaeng University](#), Thailand, has undertaken a project to examine the use of porous materials for the separation of impurities from natural gas by developing a forecasting method for the most cost-effective adsorption techniques ie the pressure swing adsorption techniques, the temperature swing adsorption techniques or the separation by a membrane. This can save considerable costs by avoiding unnecessary experiments with expensive equipment and manpower for methane recovery and other light hydrocarbons. It also seeks to find potential materials for gas separation and gas storage in petroleum or natural resources.



Turning waste heat into useful energy

A **research** partnership supported by the MTJA is working to strike a blow against global warming and reverse the impending catastrophe.

Universiti Teknologi Malaysia (UTM), King Mongkut's University of Technology Thonburi (KMUTT) and Imperial College London have combined expertise and resources to zoom in on a rarely considered part of the carbon equation.

Principal investigator Associate Professor Dr Srithar Rajoo of UTM's School of Mechanical Engineering is leading the team to scrutinise the platform to study the potential of waste heat energy recovery. They hope to reduce net carbon emissions into the atmosphere by integrating three different technologies – turbocompounding, organic rankine cycle and thermoelectric.

"Most efforts in carbon reduction in the petroleum life cycle focus on downstream activity such as transportation," says Srithar.

Upstream, like oil and gas platforms, is hardly subject to stringent carbon regulation but this is changing. This five-year project will be part of a move towards using waste heat energy at the platform.

"We began in January 2018 and are currently working on lab-based demonstrations of energy recovery technologies," says Srithar. Individual components will be designed, made and put together as a system in UTM's Lab. A pilot plant, to be set up at UTM, can be scaled up to platform scenarios.

"The goal is to improve energy efficiency and reduce carbon emissions. Our motivation is simply to mitigate global warming. The outcome will directly contribute towards reducing carbon emissions, a small but necessary step to improving life for future generations."

Waste heat energy recovery is studied by a limited number of research centres, and fewer still actively examine oil and gas platforms making this project unusual and valuable.

UTM, the programme leader, will design and build the pilot plant. Imperial College London will focus on component design and optimisation. The team at King Mongkut's University of Technology Thonburi is working on system optimisation and a novel heat exchanger design.

There are 20 researchers across the three institutions, all engineers with design and simulation skills. Srithar has researched waste heat recovery, energy efficiency and design improvements for over 20 years, actively working with industry to bridge technological supremacy with economic reality.

Dr Srithar third from left, and the team at UTM Centre for Low Carbon Transport In Co-operation with Imperial College London (LoCARTic)



Sourcing graphene from industrial waste

While graphene and graphene oxide (GO) have a wide range of applications in areas such as medicine, electronics and energy, commercial graphene is very expensive and requires graphite from mining activity.

The [University of Malaya](#) is exploring the potential of outsourcing graphite from abundantly available unwanted industrial waste, specifically from the steel industry. This new source will be an attractive alternative raw material for graphene synthesis.

The first phase of the project focuses on a comprehensive and extensive characterisation of the waste. The presence of graphite and graphene in waste samples will be studied through X-Ray Diffraction (XRD), Fourier Transform Infrared Spectrometer (FTIR) and Transmission electron microscopes coupled with Energy Disperse X-ray (TEM-EDX). This study will provide critical information on the true potential of these wastes as an environmentally and economically alternative for commercial graphene production.

Reducing exploration and production risks in the JDA

One of the most important elements that control petroleum occurrence and distribution within a basin is source rock. Petroleum source rock contains a heterogenous mixture of organic matter that turns to kerogen. The kerogen when heated undergoes physico-chemical reactions which turn it into petroleum.

The [University of Malaya](#) is evaluating the complex nature of kerogen organofacies with a view to a better understanding of petroleum generation, occurrence and distribution in the Malaysia-Thailand Joint Development Area (MTJDA), located in the northern part of the Malay Basin. This area contains mainly gas fields. The study takes an integrated approach, combining compositional kinetic and isotope analysis with basin modelling.

This study aims to establish a new and valid compositional kinetic model for source rock and to correlate genetic hydrocarbon via oil-source rock correlation to increase understanding of petroleum generation and distribution in JDA. The findings of this study will also significantly reduce exploration and production risk in this area.



We looked to palm oil because it's a versatile oil and of course, we have easy access to it because Malaysia is an important palm oil producer. Azmi Mohd Arshad

A greener fluid

A drilling fluid for the oil and gas industry developed from palm oil is set to become a world's first as a green solution for a long-standing problem bringing with it a fresh level of sustainability for the sector.

At Universiti Teknologi Malaysia's Skudai campus, petroleum engineering researcher Azmi Mohd Arshad has worked on a project close to his heart – a biodegradable and ecologically-acceptable drilling fluid for onshore and offshore use. The goal was to use palm oil derivatives and oleochemicals to create an ester-based mud, petro-jargon for drilling fluid.

Collaborating with colleagues from the UTM-MPRC Institute for Oil & Gas and Lekir Energy Sdn Bhd, a private biotechnology company, Azmi's team of 10 researchers concluded their studies in 2018 and are now looking forward to field trials and further testing.

Drilling fluids are a key part of exploration and production. They help in maintaining hydrostatic pressure, aid the drill bit into the ground and carry off cuttings, the pieces of rock, shale and sand which rumble upwards as the drill goes down. There are many kinds of drilling fluids, some of which are toxic to marine life. Increasingly these are under scrutiny by environmental regulatory bodies.

"This was our motivation, to find a green alternative," says Azmi. "We looked to palm oil because it's a versatile oil and of course, we have easy access to it because Malaysia is an important palm oil producer."

The oil palm industry and the oil and gas industry are pillars of the Malaysian economy and play important roles in feeding and fuelling a growing global population. "A new synergy between these industries will promote multi-disciplinary strategies and sustainable development," says Azmi.

That's why Azmi and the team are excited about the future. It means the industry can move forward confidently, minimise safety and environmental risks and still maintain drilling performance.

"A driller's big worry is the impact on the ecosystem. This fluid hopes to take out that threat. For regulatory bodies and governments, it makes decision-making easier. For many countries, it means that reserves in ecologically-sensitive locations can now be considered for drilling."



Clean and green

The long-standing problem of operational discharges of drill cuttings and produced water from offshore platforms is getting a fresh scientific hearing at Thailand's Chulalongkorn University.

A Bangkok research team is studying new ways to limit the pollution and possibly create a new business from waste with sustainability as the end goal. Key researcher and project manager Dr Nattawin Chawaloephonsiya hopes their findings will eventually have a positive influence on laws, regulations and guidelines related to the oil and gas industry.

Nattawin and his eight-member team are working on ways to remove oil and other particles from drill cuttings and produced water, respectively. Their plan is to create a single process to address both wastes. And, while they are at it, examine ways to turn treated drill cuttings into a useful material.

"We hope our findings will lead to new best practices in treatment and utilisation of waste in the petroleum industry," says Nattawin. "One expected outcome is more effective regulations and guidelines. And, hopefully, a new business in waste utilisation."

Their three-year research project began in January 2018. Chulalongkorn University's research team brings a range of skills and expertise related to oil separation and treating contamination.

"We are fortunate to have two strong mentors on the team," says Nattawin. Project leader Professor Dr Pisut Painmanakul and Assistant Professor Dr Chaipaporn Puprasert are well-known in Thailand's environmental engineering community.

Drill cuttings are generated during drilling as the rock is broken by the advancing drill bit. They are usually carried to the surface accompanied by drilling fluids circulating up from the drill bit. Also coming up is produced water after separating the petroleum product which contains crude oil and a variety of naturally occurring compounds, some of which are harmful to marine life. Both drill cuttings and produced water are considered waste. The problem also occurs in onshore operations.

Globally, offshore rigs have reused drilling fluids while tons of drill cuttings are dumped in the ocean. For decades, conservation lobbies have accused the industry of being ecologically hostile to marine life and traditional fishing zones.

Exploring the potential of new solvents

The study of the new solvents requires a fundamental knowledge of gas separation technologies. The research undertaken by Chulalongkorn University, Thailand, deals with many aspects of gas treating processes. The new solvents have the potential to play an important role in CO₂ absorption in the future, especially with respect to capturing CO₂ from natural gas and the LNG industries.

The results of this research will prove that the new solvents are promising for CO₂ capture from flue gas in terms of solubility and cyclic capacity. However, for industrial applications especially in natural gas and LNG, more research on the new solvents is needed, especially with respect to understanding its kinetics and corrosion, solvent degradation as well as the mathematical modelling of its solubility.

This study seeks to reduce the cost of CO₂ capture and alleviate environmental concerns.

Removing hazardous material from produced water (PW)

Produced water (PW) is the wastewater generated from oil and gas extraction activities. Chulalongkorn University is using mathematical models among others to apply Hollow Fiber Supported Liquid Membrane (HFSLM) for the removal of hazardous materials from PW. Presently, oil and gas companies around the world are working towards "zero-discharge" by reinjecting PW into the oil and gas reservoirs. However, the pollution and biological impact on the local marine environment have to be considered when PW containing arsenic and mercury is sometimes discharged into the sea.

To cope with the problems of conventional methods, the removal of trace arsenic and mercury from PW generating in the Gulf of Thailand HFSLM filtration technology has been successfully applied. The knowledge and knowhow from this research can be used as a basis for further up-scaling and reutilisation of PW and the recovery of hazardous metals.



Dr Nattawin Chawaloephonsiya (2nd from left) and team



2029 and Beyond

The future holds much promise for MTJA. Long-term collaboration for mutual benefit is set to continue well beyond 2029.

In the last 40 years substantial revenue has been generated for both countries. The figure now stands at an impressive USD10 billion net. But more than revenue generated are the 'intangible gains' that have accrued to both parties, namely the exchange of knowledge, the building of skills and capacity and the growth of a strong research base in the field of gas.

The present agreement will draw to a close in less than 10 years. "But there is provision for it to continue past this date," says Co-chair Tan Sri Rahamat Bivi. "We at MTJA have reminded our respective governments that we can continue this very positive collaboration beyond 2029," she adds.

HE Dr Kurujit Nakornthap, the Thai Co-chair says that the prosperity and friendship enjoyed by Malaysia and Thailand was a direct result of a well-managed MTJA. "Being founding members of ASEAN, we worked in an environment of trust and harmony. The ASEAN relationship has had a ripple effect across all social, cultural and economic sectors," he declares. It is envisaged that this will be a sound basis for a shared future. After all, "Natural Gas is an economic commodity that is very important to both our nations' security and when utilised successfully, uplifts the standard of living," he adds.

Both Thailand and Malaysia are concerned about energy security. Embedded in the development plans of the two nations are the fostering of greater institutional collaboration between countries. MTJA has taken a market-based approach where all the gas produced in the JDA is bought up by the two participating nations. MTJA as a regulator of the JDA, monitors

all exploration and production activities to ensure the security of supply and reliability of the gas produced. MTJA remains a part of efforts to boost gas production, reforming the energy sector in both countries and diversifying the fuel slate both sides of the border.

"There is definitely potential for continued cooperation," says Prime Minister Tun Dr Mahathir Mohamad. Such future cooperation between Malaysia and Thailand would further extend the work of the MTJA by opening more avenues of shared prosperity. Tun Dr Mahathir believes that much more can be done to uplift the living conditions and livelihoods of residents of the border areas, where problems of low income and unemployment are still prevalent. There is the possibility of developing a vibrant border region economy.

At MTJA long-term sustainable development initiatives come in the form of a Research Cess fund set up by MTJA. Contributions are made by the Production Sharing Contractors (PSCs). Research by local universities in partnership with internationally renowned research centres such as those within Imperial College, have contributed significantly to the gas industry.

"Research has focussed on clean technologies that positively contribute to climate change," Tan Sri Rahamat explains. MTJA provides the funding for several research projects but makes no Intellectual Property (IP) demands on the institutions of learning. "The idea is really to freely contribute to learning and knowledge sharing," she adds.

With the discovery of fresh gas deposits in the Gulf of Thailand, there is every possibility that the MTJA's relationship with other entities will expand to include countries within Asean.



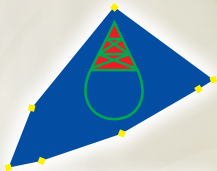


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