OCTOBER-NOVEMBER 2022 (For SOPPOA Members Only)

E-NEWSLETTER
SARAWAK OIL PALM PLANTATION OWNERS ASSOCIATION

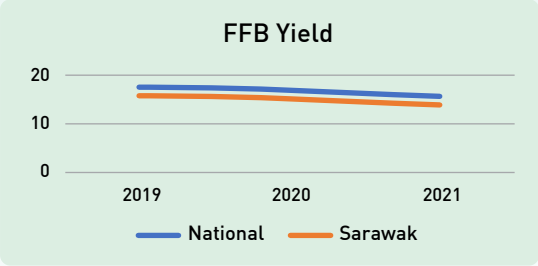
Chairman's Message

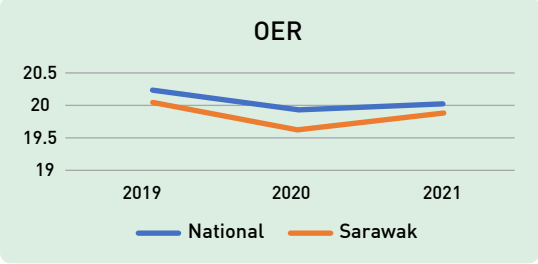
Eric Kiu Kwong Seng

Dear Members,

I have the opportunity, on behalf of SOPPOA, being invited to be one of the panellists at the inaugural East Malaysia Palm & Lauric Oils Price Outlook Conference & Exhibition (emPOC2022) organized by Bursa Malaysia Bhd (BMD) at Kota Kinabalu.

It was delighting to note that the response was overwhelming, with participation exited the initial target of 400 persons. Besides good networking, the participants also able to gather first hand information updates on topic surrounding the supply and demand of palm oil, how geopolitical conditions and the looming possibility of recession ahead affecting this commodity into the near-term.





One thing is certain, the price outlook of palm oil will remain volatile!

Another point that caught my utmost attention was when a renowned planter highlighted that "Sarawak's yield" has always been lower than the national average for most of the years.

The graphs at the left show the average FFB yield (t/ha) and OER (%) for Sarawak against the National average from 2019 to 2021 for visual comparison.

We cannot deny that managing oil palm in Sarawak has never been easy due to some natural challenges such as low fertility soil, high water table and soggy peatsoil, severe rainfall to name a few. On top of that, we also encounter lack of workers especially to harvest and collect FFB from field that in a way contribute to lower productivity.

Courtesy call from Mr. Leong Hin Kieat, Fertilizer Industry Association of Malaysia (FIAM) Chairman to SOPPOA Chairman on 20 Oct 22.

Nevertheless, we should not underestimate the importance of improving yield from the quality aspect.

For example, harvesting unripe and underripe fruit should be avoided totally at the estate level. Secondly, the evacuation and transportation of FFB to mill should be carried out within the 24-hour to maintain the freshness of FFB for processing. In addition to that, grading of FFB should also be performed strictly in accordance to MPOB's specifications at either collection center or palm oil mill.

I am confidence that by maintaining good quality throughout the supply chain, we would be able to improve the performance of our products.

Happy reading.

Courtesy Call To Deputy Minister For Energy And Environmental Sustainability Sarawak on 5 October 2022

Background

The purpose of the courtesy call to YB Dr. Hazland at Wisma Pelita was to update him on some of the environmental related issues faced by the palm oil industry as well as to follow up on the issues discussed in the previous meeting which was held on 25 Jan 2022 pertaining to the operation of EFB incinerator.

Introduction

According to the Premier, Tan Sri Abang Johari Tun Openg, Sarawak is embarking on a green energy agenda for sustainable development and to address climate change. The state government therefore has set up the new Energy and Environmental Sustainability Ministry to this end.

"With this ministry, we hope to coordinate and give direction to the development of green, renewable energy and participate in the world issue of climate change. This is a pertinent issue and we hope to contribute to the needs of the world and mitigate carbon emissions," he said at Sarawak Energy Bhd's centenary town hall at Borneo Convention Centre Kuching (Bursa, 20 Feb 2022)

The ministry is headed by the Premier and deputized by YB Dr Hazland Abang Hipni.

Dr. Hazland enlightened the meeting by running through some of important roles plays by his ministry.

He noted that climate change is a global issue and the main contributor to the increase of the earth's temperature is carbon dioxide. Thus, to solve or at least reduce the rate of climate change, he said the world needs to prepare and strategize on environmental sustainability. Otherwise, in the next five years, climate change would be irreversible.

He explained that Sarawak is blessed with natural resources whereby 70% of its landmass is forest and it also has lots of rivers and rain which can be tapped into for economic development.

Echoing the announcement made by the Premier, he said Sarawak has recently amended the Forest Ordinance, 2015, to regulate forest carbon activities in line with efforts to mitigate the effects of climate change under the Paris Agreement.

Dr. Hazland also informed that following the Malaysian Agreement 1963 (MA63) amendments, the DOE administration is in the process of given back to Sarawak. With this, he has met Environment and Water Ministry over the devolution of environmental authority to Sarawak in phases.

NREB therefore set to be key agency to protect and enhance the environmental quality and tasked with carbon trading of the state.

On the green energy agenda, the government of Sarawak has new plans to establish the state as a regional hub for renewal energy.

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The creation of the Petchem Industrial Park by SEDC was to encourage active participation from domestic and international investors, to intensify Sarawak's downstream oil and gas activities.

Meanwhile, Dr. Hazland also revealed that Sarawak is known for having a natural green technological set up to generate solar energy.

Dr. Hazland said a pilot project in Mukah is utilizing biogas made from sago waste. "People were throwing away the sago waste into the rivers – not only it is wasteful but it is polluting. So why not recycle the waste and convert it into energy? Because the waste contains 60% of methane, which can be used for biogas".

"This project is already completed in two villages and it will be extended to other places. It is done by a private company but the Sarawak government is assisting under Projek Rakyat," he elaborated.

Dr. Hazland said the state would continue to look into other sources of renewable energy.

1. EFB incinerator

The previous meeting chaired by Dr. Hazland on the operation of incinerator achieved positive outcomes.

The palm oil millers not only able to continue to operate their incinerators without installing smoke control system until 2024, DOE also agreed to lower the smoke emission specifications from the Schedule 3 to 2 of the Environmental Quality (Air) 2014.

In the same meeting, as requested by Dr. Hazland, SOPPOA collaborated with Curtin University Miri has submitted a research proposal for the improvement of the operation of incinerator to his ministry for research fund on 23 Mar 2022.

However, in this recent meeting, it was informed that his ministry does not provide research fund but was advised to apply from Sarawak Research Development Council (SRDC).

2. Bio-energy

The waste water produced in the course of crude palm oil production called POME released methane gases during the anaerobic digestion process.

Palm oil mill is mandated to install methane trapping system to refrain the methane gases being released to atmosphere.

Despite, many palm oil mills choose to flared off the gases, increasing numbers of palm oil mills construct bio-gas plant to turn waste gases into renewable energy.

The biogas has the potential for compressed natural gas, an alternate fuel for natural gas powered vehicles, feeding into natural gas pipeline or bottling and transporting for industrial use, or as future second generation bio-fuel projects in the production of hydrogen, bio-methane and others.

Dr. Hazland was informed that despite the availability of biogas plant, biogases generated from palm oil mills in Sarawak are flared off due to no end demand. Unlike the counterparts in Semenanjung Malaysia whereby they can convert the biogas to electricity and sell to the local energy provide.

As the biogas is renewable, SOPPOA has requested Dr. Hazland to look for way to utility it in the context of collaboration with his ministry.

3. Carbon market

Palm oil has been blamed for greenhouse gas (GHG) emission especially by converting peat land in order to make way for plantations.

But what has being underrated that oil palm tree possesses GHG reduction ability.

Oil palm plantation has essential GHG mitigation ability in terms of offsetting anthropogenic carbon emissions through carbon sequestration.

Carbon sequestration is the process of capturing, removal and storage of carbon dioxide from the earth's atmosphere.

Study (Sheila et. al., 2020) showed that the average carbon sequestration rate of oil palm trees is estimated to be 4.55 tC/ha/yr. With the current areas planted with oil palm, approximately 7.33 mil ton of carbon is removed from the atmosphere in Sarawak per year.

Another word, oil palm plantation has potential for carbon farming.

With that advantage, SOPPOA has requested Dr. Hazland to analyze the possible future of oil palm ecosystem for carbon trading.

East Malaysia Palm & Lauric Oils Price Outlook Conference & Exhibition (EMPOC2022) On 12-13 October 2022

East Malaysia's Contribution to Total CPO Production Doubled Since 1995 – Bursa Malaysia CEO

(Bernama) – East Malaysia's contribution to Malaysia's total crude palm oil (CPO) production have surged from 22 percent in 1995 to 46 percent in 2021, said Bursa Malaysia's chief executive officer (CEO) and Bursa Malaysia Derivatives Chairman Datuk Muhamad Umar Swift. He said the launch of the East Malaysia Crude Palm Oil Futures (FEPO) contract in October 2021 was a significant milestone in efforts to meet the hedging and trading needs of international edible oil players.

"The FEPO contract aims to provide greater price transparency for CPO in Sabah and Sarawak. The price transparency enabled by FEPO allows CPO producers to sell at a competitive price and for downstream players to better manage price fluctuations for their raw materials. "Consequently, this will improve refining margins and competitiveness in selling end products to customers." He said in his welcoming speech at the East Malaysia Palm and Lauric Oils Price Outlook Conference and Exhibition.

Muhamad Umar said Bursa Malaysia's introduction of Inter-commodity Spread between the Crude Palm Oil Futures (FCPO) and FEPO contract on Oct 3, 2022, allowed for a seamless spread trade execution between the two contracts with a simple click of a button.

He said all traders can now easily trade their viewpoints on Malaysia's various market dynamics between Peninsular Malaysia and East Malaysia through the Inter-commodity Spread.

He added that all FCPO and FEPO contracts require physical deliveries to be Malaysian Sustainable Palm Oil certified, in line with Bursa Malaysia's goal to create a sustainable marketplace.

"This makes them the world's first physical delivered commodity derivative contracts with a sustainable requirement mandated for delivery," he said.

MPOA Urges Govt to Revise Windfall, State Sales Taxes for East Malaysia Oil Palm Growers

(The Edge Markets) - The Malaysian Palm Oil Association's (MPOA) chief executive Joseph Tek Choon Yee delivered a paper entitled "The East Malaysian Palm Oil Supply Chain Equation: Snippets of History, Current Realities and Some Food for Thought".

He has urged the East Malaysian states and federal governments to revise the state sales tax (SST) and windfall profit levy (WPL), respectively, that are imposed on East Malaysian oil palm growers.

Tek said the proposed price threshold review of the SST in Sabah and Sarawak would take into account the current high cost of palm oil production, while the windfall tax should be revised back to the original 1.5% from the present 3%, after factoring in the existing SST. According to him, the SST started at RM50 per metric tonne of crude palm oil (CPO) in 1999, before it was revised to 5% per metric tonne of CPO in 2002 and 7.5% per metric tonne of CPO in 2005. He said the price thresholds which were set around 1998 to 1999 were appropriate, as the costs then

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were around RM750 per metric tonne of CPO. However, Tek noted that the cost of production has risen amid the minimum wages and high input costs of fertilisers and fuel in particular, among others. Tek said the proposed tax review would entail revising the price threshold, which would not change the present collection of SST set against the current CPO price realised today, but would fix the tax threshold to accommodate the current cost structure.

Meanwhile, he said the WPL should be brought back to its original 1.5% for East Malaysian growers from the current 3%, as their cost of production is higher than that of their Peninsular Malaysia counterparts.

CPO production year-on-year from January to September in Malaysia only rose a mere 0.25% or 34,000 metric tonnes to 13.34 million tonnes this year, from 13.31 million tonnes in 2021. Tek said national CPO production this year is only expected to hit 18 million tonnes due to the slow return of foreign workers who have missed the peak cropping season, the destructive impacts from the monsoon season, and the likelihood that the rains will intensify, hammering plantations, resulting in further crop losses in the last quarter. Because of this, there had been no growth in CPO production for the past three years, he said.

Palm Oil to Trade Below RM3,500 in 2023, says LMC International

(Reuters) - Malaysia's palm oil price is forecast to trade between 3,200-3,500 ringgit a tonne. Next year as stocks in the world's second-largest producer rise, commodities consultancy LMC International said on Thursday. "Weak supply starting in 2019 pushed up prices, the cycle is correcting," Julian McGill, head of South East Asia at LMC International, said at a conference.

Benchmark crude palm oil prices hit a record high of 7,268 ringgit ($1,552.99) in March due to a global edible oil shortage, triggered by the war in Ukraine and export curbs in Indonesia. But prices have since plunged by nearly half after Indonesia, the world's largest producer, removed a restriction on exports and waived export levies to accelerate shipments.

Jakarta is considering extending the export levy waiver on palm oil until year-end, which may draw demand away from smaller rival Malaysia and pressure prices. "A surge in exports from Indonesia, as the crop recovers and the bottlenecks are removed, is causing Malaysian stocks to rise," said McGill, adding that inventories were being pulled up to near 3 million tonnes.

Prices will continue to decline to around 3,200 ringgit in the first quarter of 2023, and remain below 3,500 ringgit into the second half of that year, McGill said. There was mixed evidence on demand destruction, and palm oil exports from Indonesia and Malaysia, which constitutes around 85% of global palm oil exports, were lower than 2019, he said.

Global Palm Oil Output Growth is Set to Slow Down, Mielke Says

(Bloomberg) -- Palm oil's annual production growth is expected to slow down to 2.3-2.5m tons in 10 years to 2030, from an average growth of 2.9m tons in the previous decade, according to David Mielke, a director of Hamburg-based Oil World, said in slides prepared for a Bursa Malaysia Derivatives industry conference in Sabah.

1. Palm oil

- Palm oil has lost its growth dynamics due to declining yields, lack of new plantings, and shortage of workers, Mielke
- Area expansion in top grower Indonesia has slowed down considerably in recent years, while insufficient replanting will keep average yields below their potential in the years ahead.

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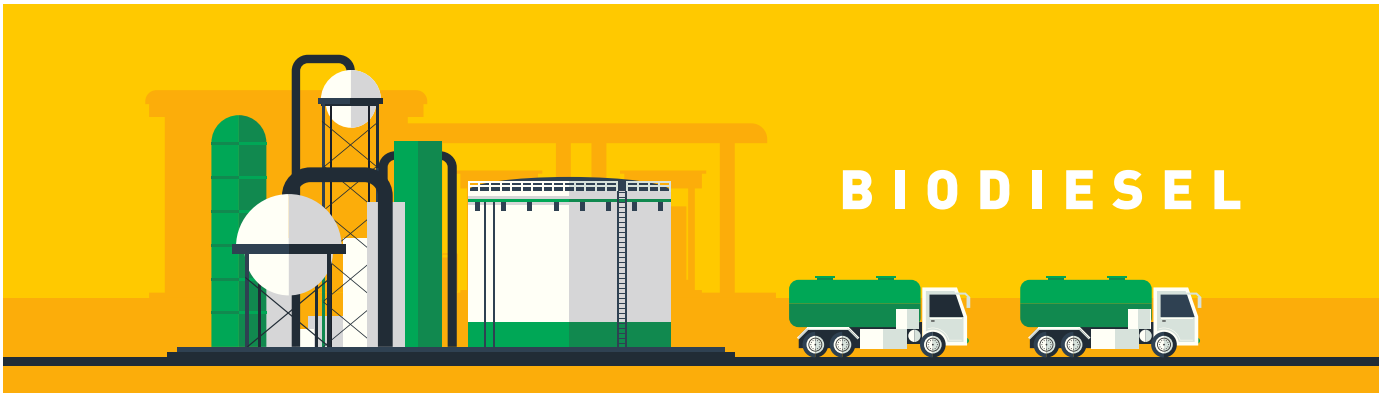
- Soaring input costs and strict sustainability criteria are also discouraging investment into the sector
- Global palm oil output seen at 80.2m tons in the current year that started in October, compared with 77.2m tons in 2021-22.
- Output in Indonesia is likely to rise by 2.2m tons in 2022-23, and by just 0.4m tons in Malaysia.
- Closing stockpiles in Indonesia estimated at 6.3m tons in 2022, against 4.8m tons a year earlier.
- Malaysian RBD palm olein prices may bottom at around $780-$810 a ton free-on-board in the October-December quarter.
- "Huge discounts" of palm oil vis-a-vis soyoil are boosting consumption in price-sensitive markets.
- However, palm's large discount to rival vegetable oils is not sustainable as prices of sunflower, soy and rapeseed oils may see further declines in 1H next year.
- NOTE: Soybean oil's premium over palm ~$645/ton Thursday, vs avg of ~$284 in past year.

2. Biodiesel

- Improved price competitiveness of palm oil in Indonesia and its effect on discretionary blending a "swing factor" to watch.
- Indonesia's biodiesel production may reach a record high of 8.7m tons in 2022, compared with 7.5m a year ago.
- Global biodiesel output seen rising to 50.5m tons in 2022, from 48.3m tons a year earlier.



Webinar On Drone Application In Agriculture On 26 October 2022

Introduction

Muhammad Syafid Salleh, Business Development Manager of SG Academy Sdn Bhd (SGA), introduced that SGA is an operator of technical and vocational education and training (TVET) programs, gives full focus to the development of local talent and the improvement of skills and re-skilling for every level of society including students, graduates and even individuals who have been laid off due to the Covid-19 pandemic.

The increasing use of drones in various local and global sectors requires the development of local talent and this has empowered SGA to train drone operators to fill the void in the market.

This webinar was jointly organized by Sarawak Skills and SOPPOA with the support of Malaysian Technology Development Corporation (MTDC) focused on the application of drones in agriculture.

As part of the agricultural industry, drones are being employed for various operations in aerial surveillance, mapping, land inspection, monitoring, spraying fertilizers, checking for diseased or rotting crops, and much more.

Syafid summarized that the three key advantages of using drone technology in agriculture.

1. High quality of data – drones with the right payload and right technique can take high-quality aerial photos and videos. The data obtained can be transformed into detailed 2D maps, 3D maps and 3D models for a complete analysis.

2. Easy to deploy – with the constant updates and advancement in drone technology, drones nowadays are much easier to be deployed and can be operated by drone operators with a minimal technical background. In addition, drones can help to obtain valuable data from hard to-reach location and hazardous situation.

3. Cost efficient – to have a drone is more economical to buy, sustain, and fuel than aircraft or helicopters for aerial inspections. For example, there is a minimum requirement to acquire a ladder, aerial lifts, and other heavy equipment to obtain data. The creation of the Petchem Industrial Park by SEDC was to encourage active participation from domestic and international investors, to intensify Sarawak's downstream oil and gas activities.

However, in order to successfully implement the drone in businesses, four transformative steps much be strictly followed. That

1. Identify problem statements
2. Develop your solutions
3. Project execution
4. Project improvement

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He advised that it is crucial to define which problem statement that require immediate intervention so that the implementation will flow through successfully.

Application in oil palm plantation

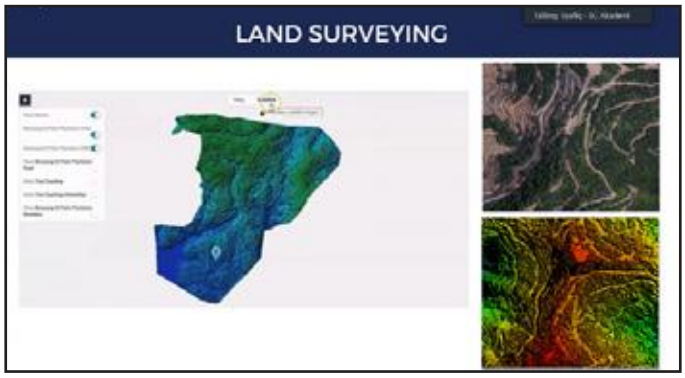
There is an increase in demand requires more modern approaches and technologies to be adopted in a sustainable manner to increase productivity in oil palm management. In general, drone technology starts to improve and is being utilized to monitor large plantation areas to a certain limited degree.

1. Land surveying

While an aerial view of an area can be obtained using satellite imagery, drones provide a more up-to-date, higher-resolution image which can then be used for further analysis with ease.

Drones have the feasibility of carry different types of sensors ie. LiDAR, thermal cameras, and RTKs, all of which enhance the accuracy of the data collected, providing even more insights to the end user.

Images collected isn't just simple images but having spatial phenomenon (longitude, latitude, and elevation) which makes them even more helpful for land surveys



2. Tree counting

Tree counting is vital for estimation of yield, observation, replanting, and layout preparation. Nevertheless, it is costly, labor-intensive, and prone to human error when done in the field.

Drone with correct sensor payload is capable of capturing the crown formation of palm tree images by using high spatial resolution images. Individual trees, on the other hand, can be segregated by using specialized software.

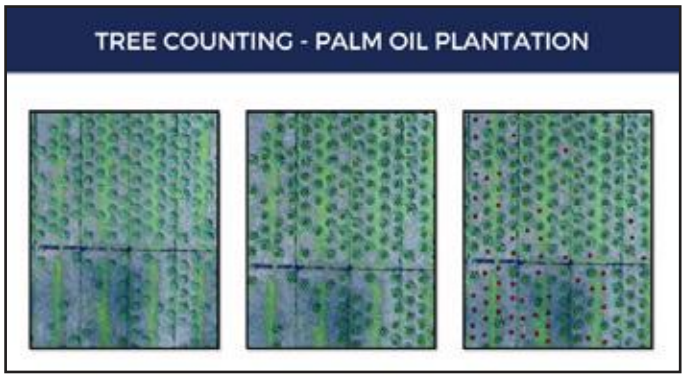
3. Chemical spraying

Be it in at the nursery stage or estate, oil palm is susceptible to various pests and inserts attack, which have possibilities to reduce the productivity of the crops.

Spraying pesticides on palm seedling can be straight forward, but as the trees grow taller in the field, it can be challenge to spray pesticides onto the canopy.

Drones can be operated easily for this purpose. The drone with tank payload proves to be able to provide efficient and accurate spraying even at terrain that are difficult to access.

A four rotor drone (quadcopter) has tested to be most suitable and efficient for this purpose.



Summary

Despite the advantages demonstrated, the application of drone technology for the plantation sector remains a challenge.

The cost of procuring drones, sensors and related materials, flight times, limited payload, regulations by relevant authorities to name a few.

However, issues arise from labor shortage and moving toward precision agriculture may be the push to adopt drone technology in oil palm plantation at the faster rate.

Seminar On Labor & Mechanization For Plantation (Lamp) 2022 by MPOB On 2-3 November 2022

The Labor and Mechanization in Plantation (LAMP) 2022 was a two days seminar organized by MPOB in Malacca. The theme of the seminar was 'Boosting Mechanization in Addressing the Labor Issues'.

The seminar was officiated by Plantation Industries and Commodities Deputy Minister Datuk Seri Wee Jeck Seng.

In his opening speech, Datuk Seri Wee stressed the development of mechanization in the oil palm plantation sector needs to be improved as fast as possible, within three to five years, as it is the best alternative in reducing the dependence on foreign labor.

Record showed that almost 391,000 foreign workers were employed by oil palm plantation in 2021, of which 74 per cent were from Indonesia.

He said as of October 2022, since the opening of borders, the sector employed only managed to recruit 13,000 foreign workers, which basically required additional 100,000 foreign workers in the plantation nationwide. In the same period, there was an increased on 0.6 per cent of local workers participation in oil palm sector.

"Therefore, to reduce the impact of labor, especially involving oil palm harvesting activities more than 35 machinery have been developed by the MPOB as an alternative to address the shortage while, at the same time, attracting local youth to engage in the sector", he said.

Meanwhile, MPOB director-general Datuk Dr. Ahmad Parveez said the organization of the LAMP 2022 Seminar aimed to provide a platform to discuss the latest developments related to the workforce situation as well as the use of mechanization in the oil palm plantation sector.

The seminar involved presentations by speakers from various backgrounds who would discuss the latest status of mechanization and labor in the oil palm industry, Among the main objective of the seminar was the dissemination of information about policies, current scenarios, issues and challenges of labor use in the country's oil palm plantation sector in addition to sharing knowledge and experience for the advancement of the oil palm industry. The organization of the seminar also involved information on the advancement of mechanization technology and encouragement for the use of machinery on the plantation sector to increase the productivity and income of farm operators.

Photo session with industry participants. (From second left) Dr. David Lim, Palm Oil Mill Association (POMA); Datuk Bacho, The East Malaysia Planters' Association (EMPA), Datuk Dr. Parveez, MPOB; Joseph Tek, Malaysian Palm Oil Association (MPOA); Halim, Sabah Softwoods Bhd, and Jeffery Ong, Malaysian Estate Owners' Association (MEOA).

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The LAMP 2022 Seminar also discussed issues of sustainability, well-being and the labor situation in oil palm plantations. Representatives from relevant organizations and plantation companies also provided useful insights into the issues facing farms workers. SOPPOA was also invited as one of the forum panelist for Panel Discussion.

On top of that, the latest developments in oil palm plantation mechanization technology presented in this seminar were expected to give exposure to the participants about the use of technology and new approaches in plantation management and maintenance.

In addition, MPOB is also embarked on high-tech R&D projects including laser & ultrasonic technology, radio coordination, RC), robotics, and various harvesting technologies. With expertise and resources from MPOB and industry, those collaborations would enhance research and development for more viable technological discoveries.

The two-day seminar was divided into 5 sessions that focused on specific issues, 16 oral presentations, and concluded with a panel discussion.

DAY 1	
Session 1	**Sustainability and Well-being in Oil Palm Industry**
Lead Paper	The Malaysian Sustainability Palm Oil (MSPO) Industry: In Grave of Labor Shortage
P1	Enhancing the Well-being of the Palm Oil Industry through MSPO 2.0
P2	Sustainable Labor Practices in Oil Palm Plantation Sector
P3	Wages Hikes: An Investment for Improved Social Sustainability Standards
Session 1	**Addressing Labor Issues through Mechanization**
P4	Elevating Labor Standards in Oil Palm Plantation Sector
P5	Addressing Forced Labor Allegations: FGV Experience
P6	Latest Development in Mechanization at Sime Darby
P7	The Impact of Mechanization on Estate's Productivity
P8	Addressing Labor Shortage through Mechanization at FELDA Schemes
P9	Estate Experience on Mechanization

DAY 2	
Session 3	**R&D and Technology Adoption**
P10	Farm Mechanization Technologies: Productivity Enhancement
P11	Automatic Fresh Fruit Bunch Detector
P12	Technology Direction of Plam Mechanization Harvesting
Session 4	**Enabling New Technologies**
P14	Accelerating Drone Revolution in Oil Palm Plantation
P15	Smart Precision Spreaders Mechanization 4.0: How Cab Easily Adopt This Technology
P16	Incorporating Robotic Technology in Oil Palm Mechanization
Session 5	**Panel Discussion**
Title	Boosting Mechanization in Addressing the Labor Issues Panelists: 1. Datuk Bacho Jansie (EMPA) 2. Dr. Felix Moh Mee Ho (SOPPOA) 3. Jeffrey Ong Twee Kwan (MEOA) 4. Dr. Harikrishna Kulaveerasingam (SDP)

Photo session after the seminar.

MPOB-SOPPOA R&D Meeting On 7 November 2022

1 Opening Remarks

The MPOB-SOPPOA R&D Meeting was chaired by Datuk Parveez, director-general of MPOB and co-chaired by Eric Kiu, Chairman of SOPPOA.

Dr. Parveez recapped that his agency has established the working committee for R&D since 2014 in order to focus on certain issues on oil palm planted in peat in Sarawak.

This meeting also serves as a platform to get update as well as recommendation of projects undertaken by MPOB.

The last meeting with SOPPOA was held in March 2020 and had managed to initiate several R&D projects to cater the needs of the industry here. This supposedly a yearly event but has to be postponed for numerous times due to MCO.

Eric Kiu informed that emPOC was in Kota Kinabalu on 12-13 October. A point to note was that despite Sarawak is the largest state with planted oil palm, unfortunately the yields are not forthcoming. That could imply that the planting knowledge might be the core of the issues.

There were many issues raised in the last meeting of which many are unique to Sarawak especially in terms of terrains and soil conditions which are very much different from Peninsular.

2 Issues Raised by SOPPOA & Respond from MPOB

2.1 R&D allocation by MPOB

MPOB received allocation from Sarawak's State Government for Mitigation 3-MCPDE GE In Palm Oil From Plantation In Peatland (Sarawak) (3MCPD00SWK) project is amounting RM3,000,000. As of 31st October 2022, a total of RM1,343,998.96 has been spent. The allocation for 2023 is estimated at RM13,343,500, which is as follows:

Budget 2023 (Estimation)

Source	Item	Allocation (RM)
Sarawak State Government	Mitigation 3-MCPDE GE In Palm Oil From Plantation In Peatland (Sarawak) (3MCPD00SWK)	1,656,000
MPOB Cess	Farm Development	8,723,700
	Research & Development ABBC (PWKR610001)	742,500
	Research & Development BSRD (PWKR610002)	1,983,300
	Trainings & Seminars	316,000

2.2 Sarawak oil palm still facing low productivity

There is a need to understand the actual reasons for low yields in Sarawak to enable remedial actions. The Taskforce on Fruit set and Pollinating Weevils was initiated specifically to address this and in short, it is undeniably a complex issue. There are many factors that

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could contribute to the condition and the taskforce is in the process of dissecting through each possible factor (details can be obtained from the Taskforce Secretariat). Whether planting on peat is the contributing factor, needs to be verified. Aside from that, weevil population and its pollinating force need to be at its optimal for good fruit set formation. Insufficient male inflorescences to breed weevils and as source of pollens could be the issue.

- The different areas might be experiencing poor fruit set formation due to different causes. The factors influencing the fruit set formation can be (i) intrinsic (weevil population level) and (ii) extrinsic (planting materials, soil types, VOC emission etc.).

- While some areas are indeed experiencing poor fruit set due to the low population of weevil, other areas, especially in first generational peat planting in Sarawak are facing a similar problem even though with weevil populations of more than 20,000 weevil individuals/ha.

- In such areas, extrinsic factors were more influential. One of the main factors identified was the soil type which affects the palm physiologically.

- It was also found that areas in Sarawak tend to have a high inflorescence sex ratio of more than 90%, indicating a low density of male inflorescences. As such, the remedy to these problems has to be tailored to the specific reason why the fruit set is low.

Lower fronds desiccation /Premature frond desiccation (PFD)

Lower or premature frond desiccation (PFD) occurrence in oil palm planted on deep peat soil is mainly due to poor water management. Poor water management in low-water table (below 80 cm above ground) and high-water table conditions with stagnant or prolonged waterlogging can affect the lower root mass. Both situations cause root damage and negative physiological impacts on the oil palm. Low water table cause water deficit that affects oil palm physiology resulting in reduced root mass. In contrast, PFD in MPOB's Sarawak study occur in high-water table. PFD at high-water table (40 cm to 50 cm from aboveground) showed that prolonged waterlogging can accelerate the occurrence of PFD and periodic flushing as a water management measure during rainfall season successfully reduced PFD incidences with a recovery rate of 77% in severe category. Prolonged waterlogging potentially caused reduced air and oxygen supply to oil palm roots, as well as the accumulation of toxic gases (methane, carbon dioxide and ethylene) further damaging the roots. Hence, Best Management Practice (BMP) of maintaining water level at 40 cm to 50 cm (groundwater piezometer reading) from aboveground or 50 cm to 70 cm in collection drains and periodic flushing were found to be effective in reducing PFD as well as preventing stagnant or prolonged waterlogging.

Frond Snapping

Frond snapping mostly happens in mineral soil and has been reported in Peninsular Malaysia, Sabah, and Sarawak. There is little information on this phenomenon and the causal factor is still unclear. AGT has initiated a new research project in 2022 relating to this issue, to examine the factors and explore the seriousness of this incident throughout Malaysia. As a start, a survey on frond snapping will be conducted at estate level and the team appreciates full cooperation from the industry to provide feedback.

2.3 Smoke emission by incinerator and ESP system

- For immediate solution, existing incinerator or any newly developed incinerators technology that equipped with an air pollution control system or smokeless incinerator technology can be considered to reduce the amount of pollutant emission. Based on recent development in waste management published, there are several types of smokeless incinerators used for medical / garbage waste. However application of smokeless incinerator for EFB feedstock must be further explored.

- Due to the regulation stipulated by DOE, MPOB focus is mainly on the research to valorize EFB into useful application such as composting, bio-composite products and bio-pellets,

- MPOB is open for any form of collaboration with the industry to tackle pertaining issues.

- Engagement with DOE has been elevated to ensure relevant data & information suitable for a workable specification of pollution prevention. For example, a series of discussion with DOE has prompted the regulation on color and odour from POME to be revised from its original proposal.

- MPOB has formed a Special Task Force on Clean Air Regulation to verify the performance of existing air pollution control systems (ESPs, vorsep, wet scrubber) installed in 18 palm oil mills. The result showed that the currently available technology installed at the mill is unable to comply with the regulated limit (150 mg/Nm3) consistently. The outcome of this study has been tabled to the DOE for their necessary action. MPOB has also initiated several additional investigations involving the usage of titanium-plated acoustic cleaners that generate the correct frequency for removing dust in the boiler.

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- MPOB has also signed a collaboration agreement with Eureka Synergy Sdn Bhd to explore gasification technology as a pre-treatment process to reduce particulate emissions in the boiler. Through this technology, co-firing syngas with palm biomass is expected to promote complete combustion, thus reducing particulate emission.

2.4 Problems caused by P&D

Light Trapping for Adults Bunch Moth

The studies carried out at Daro and Sri Aman have provided preliminary information on the efficiency of the different light sources in light trapping for capturing T. mundella. Additionally, patterns of night flight behaviour of the pest were also observed. This study observed that different light sources influenced the number of moths captured. Light-trapping using fluorescent bulbs has resulted in a significantly higher number of captures, especially during the study's first phase in location A (Daro). In contrast, no significant differences in the number of captures were observed in the subsequent stage of the study. This study also observed that the different sexes of T. mundella have distinct flight night behaviour. Therefore, results can be interpreted as information for the diversity of the bunch moth in the oil palm plantation.

Termite

Several studies have been conducted in oil palm to manage termite infestations, particularly coptotermes spp. Chemical and biological agents have also been studied.

Entomopathogenic fungi such as Metarhizium anisopliae and Beuveria bassiana have shown high efficacy against Coptotermes in laboratory conditions. However, in field conditions, the result is not very satisfactory, but it can still be compared to chemicals such as Fipronil, which are currently used by the majority of estates. MPOB has also

investigated the use of Insect Growth Regulators (IGRs) such as hexaflumuron to control the population. According to a study conducted in collaboration with WFM Estates in Sri Aman, the products could reduce termite colony activities depending on colony size (an average of 2 or 3 sachets needed to reduce infestation with more enormous colonies).

MPOB has also developed the Termite Infestation Severity Index (TISI) to facilitate standardisation in recognising the symptoms. The study of the index's relationship with the water table and other peat soil properties is currently underway to facilitate standardization in acknowledging the symptoms. The relation of the index with the water table and other peat soil properties study is currently under progress.

Bagworms

In 2020, FELCRA representatives from various areas in Sarawak attended a lecture on Integrated Pest Management of bagworm at FELCRA Mukah Office, followed by a site visit to FELCRA Sg Sebauh Estate, Mukah.

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In addition, MPOB officers from the MPOB Sessang station provided advice on bagworm control, particularly to oil palm smallholders.

With good collaboration from the smallholders, a recent infestation reported at Batu Niah has been successfully controlled. A census conducted on 24/05/2022 reported that the bagworm population is currently under the economic threshold level. MPOB currently keeps monitoring the infested area from time to time.

Rats

A project entitled "Biology, Ecology and Integrated Management of Sundamys muelleri" has been approved by PAC in 2021.

MPOB is initiating a study on the biology, ecology, and integrated management of Sundamys muelleri. The study will be conducted in MPOB Sessang and MPOB Lahad Datu.

The study will address the living behaviour of S. mulleri and formulate the best method of its control.

For the study, MPOB might require cooperation from SOPPOA members to provide samples of S. muelleri populations to be brought back to MPOB facilities.

In addition, MPOB has a Non-Disclosure Agreement (NDA) with Orillion, a New Zealand-based company, to test a novel rodenticide. It will be lab and field-tested in the upcoming months. Similarly, the study will emphasise S. muelleri population control.

2.5 Poor fruit sets

- During young maturity stage, the inflorescence sex ratio tends to be high (90% at 4 years old palms) (Corley and Tinker, 2003), reducing the pollen availability in the area and partially limiting the number of pollinating weevil in the area. Normally the ratio will drop to 60%-70%. However, in Sarawak, especially in the first generational peat planting, the observation is extended to 10 YO plantings (Average: 93-95%). Comparatively, the ratio in studied sites in Pen Malaysia ranges from 78%-84%. These areas generally have satisfactory fruit set %. A high sex ratio indicates a lack of male inflorescences, which limits the pollen availability and resources available to the pollinating weevil. Generally, early fruit formation, in some cases, does tend to be poor. There is a possibility that emphasis on root establishment at the early developmental phase is drawing up most of the nutrients for its metabolism. And once the root system is stable fruit formation would improve. In most cases, we do see improvement in fruit sets subsequently. To circumvent this issue, maybe we could explore the 'priming' of planting materials before field planting. The definition of priming is to introduce plants to early potential eliciting factors, thus enabling them to adapt faster to the new environment.

- The germplasm collection is a good resource for developing new varieties. MPOB is continuously designing new hybridizations (crossing experiments) to leverage the available genetic diversity and conducting trials to field test as well as collect data on their yield performance coupled with other agronomic traits of importance.

- Developing new oil palm varieties through conventional breeding or driven by technology, i.e. tissue culture, and genome editing is laborious, time consuming and costly but nonetheless they need to be

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done. Currently, we are testing our high-yielding clones on peat as well as extensively utilising the PS1.1. We are also developing potential crosses with partial resistance to Ganoderma, however, this is still at the nursery level and needs to be verified before field testing.

- The pollinating weevil populations in the field fluctuate throughout the year. Population fluctuation is generally due to natural causes (i.e. lifecycle of weevils) and, in some instances, due to management practices (i.e. insecticide usage, lack of male inflorescences). The population fluctuation is usually localized and normally does not affect the pollination too much (Unless the population is diminished).

- VOC concentration affects the attractiveness of the male inflorescences. It was found that the higher level of attractancy at the level of 100 ppm estragole compared to 10-70 ppm and 150-200 ppm (Muhammad Fahmi et al., 2021, biorxiv). The rate of VOC concentration can be influenced by various biotic & abiotic factors. In general, stressed plants emit greater concentrations of VOCs. However, information on the rate of VOC emission/ factors affecting the VOC concentration in oil palm are still lacking.

2.6 Rat damage by Sundamys muelleri species

- MPOB is initiating a study on the biology, ecology, and integrated management of Sundamys muelleri. The study will be conducted in MPOB Sessang and MPOB Lahad Datu. The study will address the living behaviour of S. mulleri and formulate the best method of its control.

- For the study, MPOB might require cooperation from SOPPOA members to provide samples of S. muelleri populations to be brought back to MPOB facilities.

- In addition, MPOB has a Non-Disclosure Agreement (NDA) with Orillion, a New Zealand-based company, to test a novel rodenticide. It will be lab and field-tested in the upcoming months. Similarly, the study will emphasise on S. muelleri population control.

2.7 Ganoderma: Basal Stem Rot (BSR) and Upper Stem Rot (USR)

- Currently, one of MPOB priority projects is breeding for Ganoderma disease resistance palm. To date, MPOB has screened more than 150 progenies based on MPOB commercial progenies, germplasm collections and clones. Three potential progenies have been identified as potentially tolerant to Ganoderma infection. A field trial is currently ongoing.

- There may be multiple reasons for Ganoderma to be aggressive but this requires intensive investigation. One of the reasons may include the dormancy period in peat allowed changes in its biotrophic and survival characteristics.

- Based on previous studies, adaptations of pathogen aggressiveness components with respect to pathogen, host and environment relationships were related to: (i) climatic parameters; (ii) microbial populations; and (iii) selection for quantitative traits can influence pathogen evolution in agricultural pathosystems.

- The biodiversity of insects in East Malaysia (Sabah) has been conducted by En Muhammed Yaqin and successfully identified 53 species (belonging to 11 orders) of insects associated to Ganoderma fruiting bodies. Most of the insects were fungivourous. Similar experiment can be repeated in Sarawak to assess the diversity of insects involved in association to USR incidences.

- A new project investigating the Ganoderma disease incidence contributing factors in different soil types is currently on going.

- Part of this is currently being investigated by MPOB and the association between soil health and poor nutrient retention is also being investigated.

- There has not been a formal investigation on this but based on the potential number of basidiospores released, it may be influential in the spread. However, plantation management should label and record the fruiting body's presence on the respective palms. Failing to do so, may lead to reduced number of infected palms.

7th Sarawak Business Federation (SBF) Annual General Meeting On 14 November 2022

SBF, first launched on Sepp 9, 2016, is an umbrella body which represents key organizations and industries in Sarawak.

It now has 20 component members of various chambers, trade guilds and business organizations across.

SBF held its 7th AGM at Grand Margherita Hotel Kuching on 14 Nov 2022 to elect office bearers and council members for 2022-2024 term.

Dato' Sri Abang Abdul Karim Tun Openg has been re-elected as the president of SBF.

Datuk Philip Ting Ding Ing was re-elected as deputy president, while nine others were elected as vice-presidents.

They are Dato' Tan Jit Kee, Dato' Leanard Martin Uning, Dato' Abang Helmi Ikhwan, Datuk Mutang Tagal, Renco Yong King Hwa, Gracie Geikie, Dato' Sri Ir. Peter Lu Nguang Siong, Augustine Wong Chung Ho, and Foo Shau Lung.

Dato' Jonathan Chai Voon Tok was re-elected as secretary-general, while Angie Kueh Li Ping as deputy secretary-general.

Eric Kiu Kwong Seng represents SOPPOA was re-elected as treasurer, and Anne Kung Soo Ching as deputy treasurer.

Albert was re-elected as legal advisor.

The council members include Kapitan So Teck Kee, Tek Siew Liong, Hemang Yu Abit, Lohong Tajang, Eddit Oon Hoon Wah, Ferdinard Wong, Zoey Ting Giek, Lu Jye Ying, Alvia Sia Chung Hu, Chew Heo Lee, Sean Liak Jin Seng, Peter Chai Mui Seng, Jordan Ong Chung Siang, and Sean Hii Ru Hiik.

In the past years, SBF has charted a number of significant milestones and various ongoing projects such as the SBF Business Recovery Fund – a RM20 mil special grant from Sarawak government on 14 Oct 2021 which meant for SBF members to organize capacity building and enterprises development programs.

The fund was supposed to be utilized completely in 2022 but was on-hold due to some disagreement on implementation processes by a government agency.

After numerous appeals by SBF directly to the Premier, it was agreed that SBF would be the immediate custodian and management of the fund.

The new terms of reference for the utilization of the fund were agreed upon, that:

1. it is aimed for capacity building of existing employees of the members,
2. the duration of training should not exit 12 months,
3. only covers tuition fees,
4. payment is made directly from SBF to training provider,
5. all proposals to be reviewed and approved by SBF Review Committee.

2023 Sarawak Budget

Sarawak First: Towards An Inclusive, Prosperous and Harmonious Society

Total Ordinary Expenditure: RM10.797 billion

Consisting of:
- **RM3.997 billion Operating Expenditure**
- **RM6.8 billion Development Expenditure Estimates**

Projected Revenue: RM11.035 billion

Consisting of:
- **TAX REVENUE: RM5.246 billion, including RM4.195 billion from State Sales Tax; RM550 million from raw water royalty; RM287 million from forest royalty, timber premium and tariff; and RM214 million from mining royalties, land rents and others**
- **NON-TAX REVENUE: RM5.498 billion including RM2.335 billion from cash compensation in lieu of oil and gas rights; RM1.864 billion from dividend income; RM650 million from interest income; RM400 million from land premium; RM120 million from cash compensation in lieu of import and excise duties on petroleum products; and RM129 million from others including licences, service fees, permits and rentals**
- **NON-REVENUE RECEIPT: RM26 million**
- **FEDERAL GRANTS AND REIMBURSEMENTS: RM265 million**

Eleven Strategic Thrusts and Initiatives

Strategic Thrust 1: Achieving Economic Prosperity

- RM420 million for Rural Transformation Programmes
- RM500 million for Projek Rakyat
- RM237 million for Special Projects (formerly Minor Rural Projects)
- RM52 million for affordable housing projects in Kuching, Serian, Betong, Sibu, Mukah and Miri
- RM42.5 million to intensify urban renewal programme
- RM50 million for Longhouse Loan Scheme
- RM40 million for Housing Deposit and Repayment Assistance Scheme (HDRAS)
- RM80 million for the poor to repair their dilapidated houses

Strategic Thrust 2: Stimulating Economic Growth

- RM1.12 billion to intensify infrastructure development such as roads and bridges, ports, and riverine infrastructure particularly in the rural areas
- RM26 million for electricity supply projects
- RM125 million for the implementation of water supply projects
- RM900 million for projects under the Sarawak Water Supply Grid Programme for Stressed Areas
- RM65 million for the development of industrial parks
- RM6 million to further develop the mining sector
- RM11 million to enhance air connectivity
- RM87 million for the implementation of tourism-related projects
- RM35 million for various tourism events and festivals
- RM12.5 million for international business events
- RM500,000 to kick start the construction of Sarawak Handicraft Centre
- RM1.5 million for the Sarawak Craft Council
- RM32 million for Sarawak Tourism Board for its operation, tourism marketing and promotion

Strategic Thrust 3: Promoting Investment and Enterprises Development

- RM7 million for InvestSarawak
- RM18 million for Special Relief Fund, Targeted Relief & Recovery Facility (TRRF) and PENJANA Tourism Fund (PTF)
- RM14 million for Skim Kredit Mikro Sarawak and Skim Pinjaman Industri Kecil dan Sederhana (SPIKS)
- RM7 million for Graduan ke Arah Keusahawanan (GERAK), Usahawan Teknikal & Vokasional (USTEV) and Transformasi Usahawan Desa Sarawak
- RM5 million for Go Digital Programme

Strategic Thrust 4 Transforming Sarawak Into A Competitive Economy

- RM10 million for Trade and Tourism Office in Singapore (STATOS) as well as setting up of another two in Brunei and Pontianak, Indonesia
- RM14.6 million to complete the farming facilities at Sg Baji Agropark and for Pant Bugis Agropark preliminary works
- RM1.5 million for three new Permanent Food Production Zones at Kubong, Sg Sebiew, and Tunoh
- RM900,000 for the rehabilitation and upgrading works of DID Schemes in Tanjung Purun and Pueh in Kuching
- RM25 million for the rehabilitation of eight DID schemes in Samarahan Division and in the Food Basket region of Betong and Mukah
- RM229 million allocated to Integrated Regional Samarahan Development Agency (IRSDA) for irrigation and drainage projects
- RM52 million for the development and upgrading of infrastructure and facilities at Loba Stoh Aquaculture Park
- RM21 million for development of precision farming park
- RM26 million for raising income of farmers and smallholders
- RM25 million for Sarawak Agro Fund

Strategic Thrust 5: Developing Human Capital

- RM28 million for Establishment Of Learning Institutions and Resource Centres
- RM8 million for State-owned International School in Kuching
- RM40 million for Centre of Technology Excellence Sarawak (CENTEXS)
- RM30 million as assistance for repayment of PTPTN loan
- RM20 million for Early Childhood Care and Education (ECCE)
- RM15 million annual grant to 3,000 early childhood care institutions
- RM13.7 million for scholarship and loan for students
- RM10 million for free tuition programme
- RM1.95 million for One-Stop Early Intervention Centre (OSEIC) Sarawak

Strategic Thrust 6: Accelerating Digital Adoption and Data Utilisation

- RM48 million for Smart City projects in Kuching and Miri
- RM25 million for Digital State Government Services

Strategic Thrust 7 Balancing Economic Growth with Environmental Sustainability

- RM2.3 million to promote environmental sustainability
- RM6.5 million for Totally Protected Area and Wildlife Protection and Management
- RM3 million for a comprehensive study on the Sarawak Climate Change Policy and Low Carbon Society Blueprint in Cities and Towns in Sarawak and Formulation of Sarawak Green Economy Policy and Action Plans

Strategic Thrust 8: Strengthening Social Welfare

- RM52 million for various welfare aids
- RM21 million for Free Water Programme
- RM15 million for Post-Natal Care Assistance
- RM12 million for Kenyalang Gold Card (KGC) as Death Compassionate Assistance for 4,000 beneficiaries of the elderly aged 60 and above
- RM10 million for Endowment Fund Sarawak
- RM10 million for financial assistance on Electricity Connection Charges
- RM4.2 million as Special Grant for Kasih Suri Keluarga Malaysia
- RM3.75 million for Low Income Household Empowering Programmes (e-Life)
- RM3.5 million for awareness and intervention programmes for community wellbeing
- RM2 million for Bantuan Pesakit Buah Pinggang (BPBP)
- RM500,000 for the setting up of Safe Haven for Homeless and Displaced Communities Centre in Bintulu and Miri
- RM500,000 for the initial works to set up Special Needs Community Centre (SNCC)
- RM2.2 million for the setting up of Community Social Support Centre (CSSC)

Strategic Thrust 9 Enhancing Culture, Sports and Youth Development

- RM6.1 million for youth and culture development programmes
- RM2 million for youth entrepreneur development
- RM41 million for Sarawak Sports Corporation
- RM17 million for Sarawak State Sports Council
- RM47 million for various sport facilities projects

Strategic Thrust 10: Promoting Research and Development, Science and Technology, and Innovations

- RM20 million to kick start the construction of Sarawak Science Centre
- RM2 million for the establishment of Sarawak Bio-Industrial Park
- RM20 million for the setting up of Sarawak Infectious Disease Centre
- RM8 million for Sarawak Research and Development Council
- RM21 million for Sarawak Biodiversity Centre to promote R&D in biodiversity

Strategic Thrust 11: Enhancing State Government Capacity and Service Delivery

- RM27 million for capacity building of Sarawak Civil Service workforce
- RM28 million for the maintenance of State Government building including offices and quarters
- RM167 million for the upgrading of the existing building and new construction
- RM23 million for Establishment of Sarawak Coastguard (SCG) and Immune Belt Enforcement Team (IBET)