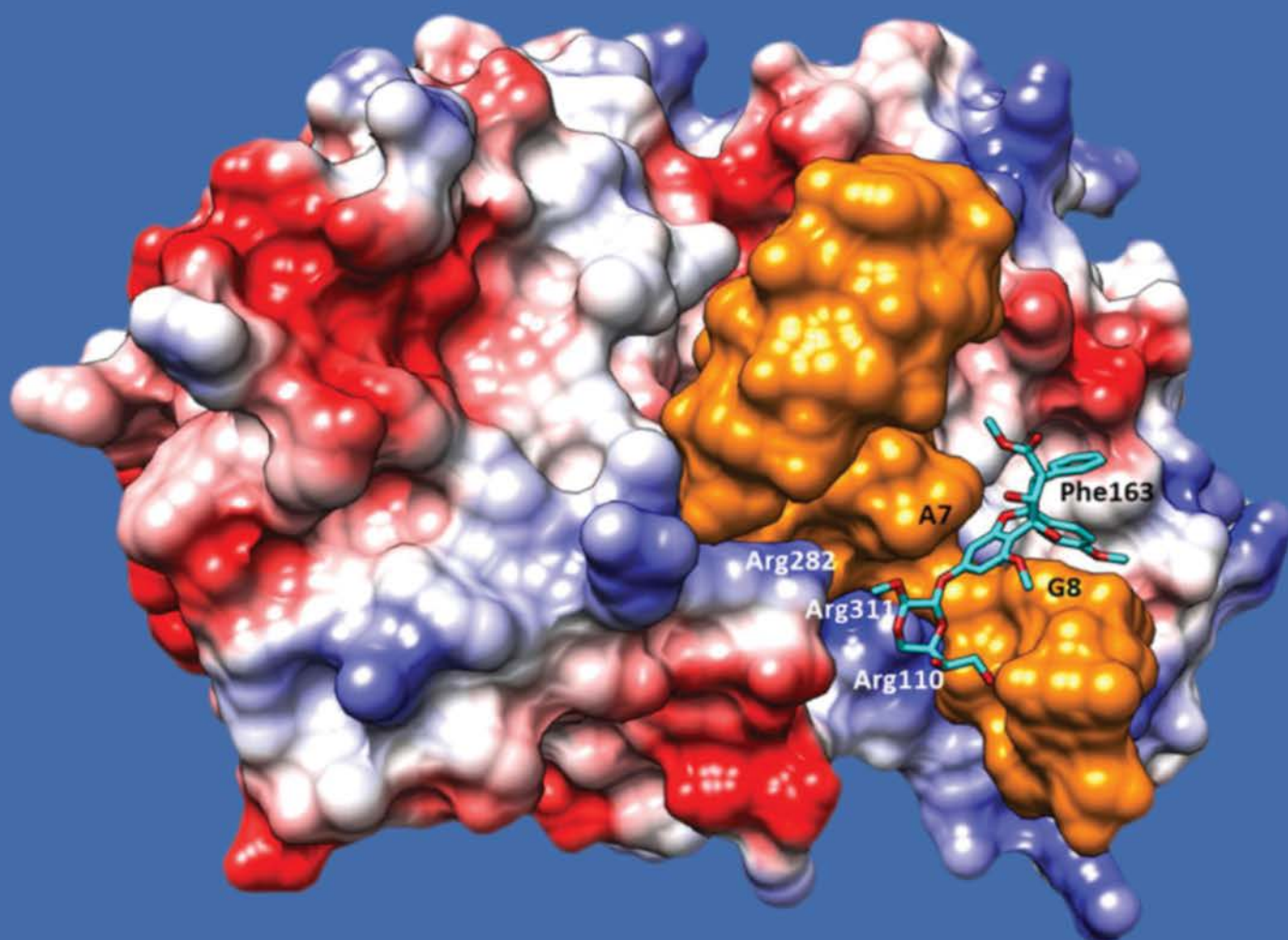




Sarawak
Biodiversity Centre



ANNUAL REPORT **2022**

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The background of the entire page is a close-up photograph of numerous petri dishes, some containing dark, textured samples. A semi-transparent blue rectangle is centered over the image, serving as a backdrop for the text.

Our Vision

**Enriching Lives with
Breakthrough Innovations
in Biodiversity**

Our Mission

**To Decode Biodiversity
for the Benefit of Sarawak**

Tagline

**Biodiversity for
a Better Tomorrow**

FOREWORD FROM THE CHAIRMAN

In the year 2022, I am pleased to emphasise the unwavering dedication of the Sarawak Biodiversity Centre (SBC) in supporting Sarawak's pursuit of modern and high-income status by 2030, under the esteemed leadership of the Right Honourable Premier of Sarawak. At SBC, we wholeheartedly embrace this vision and are resolute in our commitment to upholding the three fundamental pillars outlined in the Post Covid-19 Development Strategy (PCDS) 2030 namely, economic prosperity, social inclusivity, and environmental sustainability. Sarawak's journey toward economic prosperity to achieve RM282 billion Gross Domestic Product (GDP) by 2030 is not a solo venture. It is a collective team effort involving various sectors, which includes the biodiversity.

First and foremost, SBC places utmost importance on economic growth, fostering innovation and strategic partnerships. Our research taps into Sarawak's biodiversity potential for economic advancement. SBC pioneering work on Sarawak's algae for commercial products is an example of turning scientific discovery and research into future economic benefits.

The principle of social inclusivity forms the foundation to create a society that thrives on fairness, justice, and shared prosperity. With this, SBC has once again demonstrated its dedication to translating these values into tangible actions. On 21st May 2022, a historic event took place as SBC achieved a significant milestone through the signing of the second Benefit Sharing Agreement (BSA) in Malaysia under the LitSara® project.

Environmental sustainability lies at the core of our endeavours, as we strive to protect and preserve Sarawak's rich biodiversity. By doing so, we can ensure a harmonious coexistence between economic development as well as environmental and biodiversity stewardship. One noteworthy initiative that exemplifies our commitment is the Traditional Knowledge Documentation Programme undertaken by SBC, which demonstrates how traditional knowledge and practices can contribute to our understanding of environmental dynamics.

We take immense pride in acknowledging the significant progress we have made throughout the years in scientific discovery, conservation and sustainable development. The unwavering dedication and collective efforts of the SBC team have played a pivotal role in these remarkable achievements. As we look ahead, we hold firm confidence that SBC will continue to spearhead biodiversity research in Sarawak.



YB Datuk Amar Haji Mohamad Abu Bakar Bin Marzuki
Chairman, Sarawak Biodiversity Council



CORPORATE INFORMATION

SARAWAK BIODIVERSITY COUNCIL

CHAIRMAN



YB Datuk Amar Jaul Samion
Sarawak State Secretary
2020 - 2022



YB Datuk Amar Haji Mohamad Abu Bakar Bin Marzuki
Sarawak State Secretary
w.e.f. 1st July 2022

DEPUTY CHAIRMAN



YBhg Datu Kameri Bin Haji Affandi
Permanent Secretary
Ministry of Education,
Innovation and Talent Development
2020 - 2022



Tuan Haji Azmi Bin Haji Bujang
Permanent Secretary
Ministry of Education,
Innovation and Talent Development
w.e.f. 1st November 2022



Dr Yeo Tiong Chia
Chief Executive Officer
Sarawak Biodiversity Centre

SECRETARY

MEMBERS



YA Dato Sri Talat Mahmood Bin Abdul Rashid
State Attorney General



YBhg Datu Sr. Zaidi Bin Haji Mahdi
Permanent Secretary
Ministry of Natural Resources and Urban Development



YBhg Dato Sri Dr Wan Lizozman Bin Wan Omar
State Financial Secretary



YBhg Datu Dr Muhammad Abdullah Bin Haji Zaidel
Deputy State Secretary
(Economic Planning and Development)
w.e.f. 1st July 2022



YBhg Datu Hamden Bin Haji Mohammad
Director of Forests
Forest Department Sarawak



Dr Alvin Chai Lian Kuet
Director
Department of Agriculture Sarawak
2018 - 2022



Mr Dominic Anak Chungat
Director
Department of Agriculture Sarawak
w.e.f. 15th March 2022



Mdm Peggy Anak Ronin Edin
Controller of Environmental Quality
Natural Resources and
Environmental Board



YBhg Professor Datu Dr Andrew Kiyu Dawie
Professor of Public Health,
Faculty of Medicine and Health Sciences,
University Malaysia Sarawak



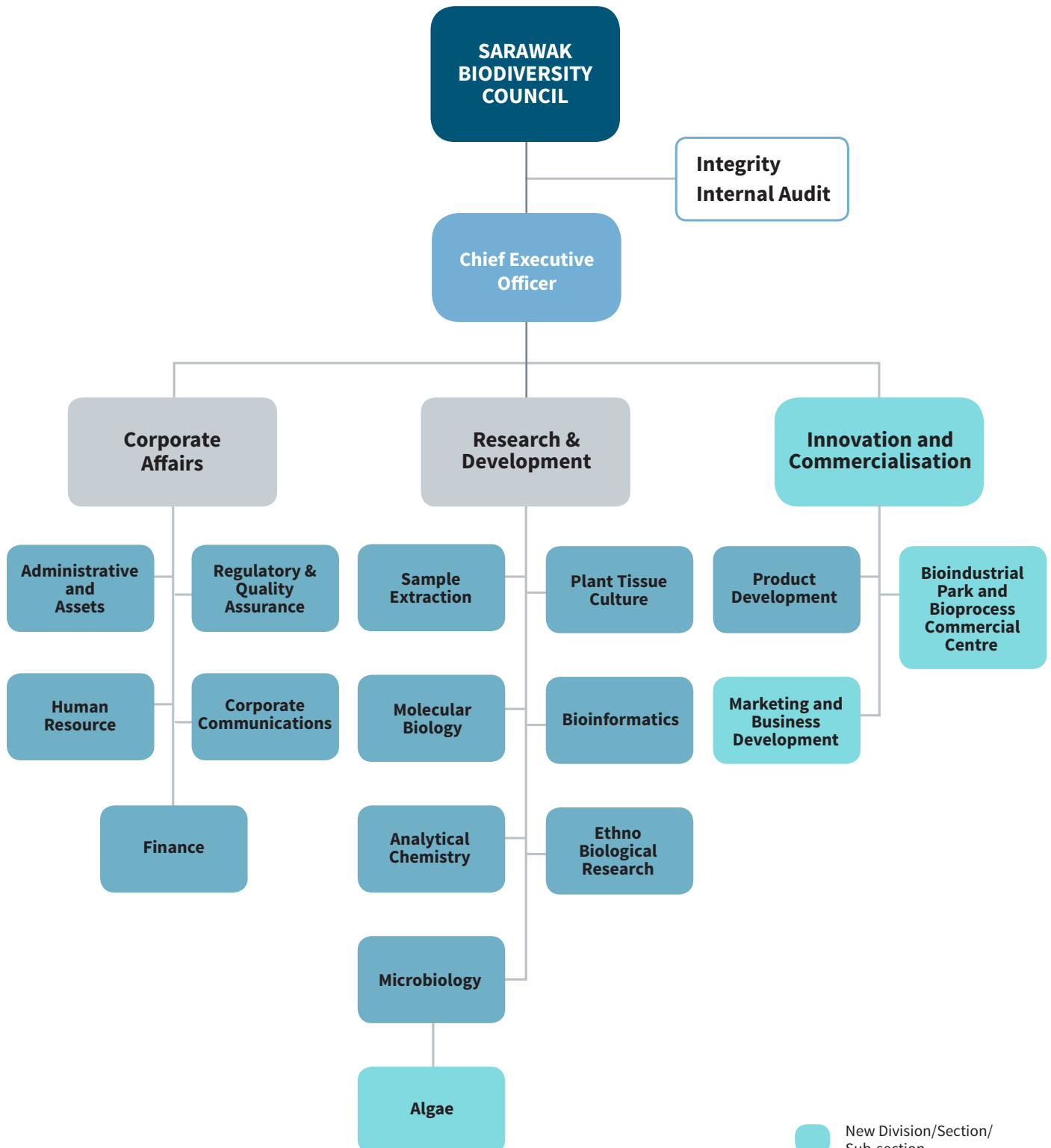
Mdm Anne Kung Soo Ching
Chief Executive Officer
Instacom Engineering Sdn. Bhd.
w.e.f. 1st March 2022



YBrs Dr Mary Jane Cardosa
Chief Technical Officer
Integrated Research Associates LLC
w.e.f. 1st March 2022

CORPORATE INFORMATION

Organisation Structure



 New Division/Section/
Sub-section



COMMITTEES UNDER THE COUNCIL

COMMITTEES UNDER THE COUNCIL

Establishment Committee

CHAIRMAN



YB Datuk Amar Haji Mohamad Abu Bakar Bin Marzuki

Deputy State Secretary
(Socio-Economic Transformation)
2018 - 2022



YBhg Datu Dr Muhammad Abdullah Bin Haji Zaidel

Deputy State Secretary
(Economic Planning and Development)
w.e.f 1st July 2022

MEMBERS



YBhg Datu Sr. Zaidi Bin Haji Mahdi

Permanent Secretary
Ministry of Natural Resources and Urban Development



Dr Alvin Chai Lian Kuet

Director
Department of Agriculture Sarawak
2018 - 2022



Mr Dominic Anak Chungat

Director
Department of Agriculture Sarawak
w.e.f. 15th March 2022



YBhg Datu Haji Ismail Bin Mohamad Hanis

Director
Human Resource Development and Management Unit

SECRETARY



Dr Yeo Tiong Chia

Chief Executive Officer
Sarawak Biodiversity Centre

COMMITTEES UNDER THE COUNCIL

Finance and Investment Committee

CHAIRMAN



YBhg Dato Sri Dr Wan Lizozman Bin Wan Omar
State Financial Secretary

MEMBERS



YBhg Datu Kameri Bin Haji Affandi
Permanent Secretary
Ministry of Education, Innovation and Talent Development
2020 - 2022



Tuan Haji Azmi Bin Haji Bujang
Permanent Secretary
Ministry of Education, Innovation and Talent Development
w.e.f. 1st November 2022



Dr Alvin Chai Lian Kuet
Director
Department of Agriculture Sarawak
2018 - 2022



Mr Dominic Anak Chunggat
Director
Department of Agriculture Sarawak
w.e.f. 15th March 2022



YBhg Datu Hamden Bin Haji Mohammad
Director of Forests
Forest Department Sarawak

SECRETARY



Dr Yeo Tiong Chia
Chief Executive Officer
Sarawak Biodiversity Centre

COMMITTEES UNDER THE COUNCIL

Audit Committee

CHAIRMAN



Mr John Kennedy Janang
Director
Financial Compliance Unit
State Financial Secretary's Office

MEMBERS



Dr Alvin Chai Lian Kuet
Director
Department of Agriculture
2018 - 2022



Mr Dominic Anak Chungat
Director
Department of Agriculture Sarawak
w.e.f. 15th March 2022



Mdm Peggy Anak Ronin Edin
Controller of Environmental Quality
Natural Resources and Environment Board

SECRETARY



Ms Wong Hie Ping
Accountant
Sarawak Biodiversity Centre

COMMITTEES UNDER THE COUNCIL

Technical Committee on Access and Benefit Sharing

CHAIRMAN



YBhg Datu Sr Zaidi Bin Haji Mahdi
Permanent Secretary
Ministry of Natural Resources and Urban Development

MEMBERS



YBhg Datu Dr Muhammad Abdullah Bin Haji Zaidel
Director
Economic and Planning Unit
2019 - 2022



Puan Rozaini Binti Mohammad Zahir
Acting Director
Economic and Planning Unit
July 2022 - November 2022



YBhg Datu Hamden Bin Haji Mohammad
Director of Forests
Forest Department Sarawak



Dr Alvin Chai Lian Kuet
Director
Department of Agriculture Sarawak
2018 - 2022



Mr Dominic Anak Chungat
Director
Department of Agriculture Sarawak
w.e.f. 15th March 2022



Tn Hj Zolkipli Bin Mohamad Aton
Chief Executive Officer
Sarawak Forestry Corporation



Dr Yeo Tiong Chia
Chief Executive Officer
Sarawak Biodiversity Centre



Ts Dr Peter Morin Nissom
General Manager
Sarawak Research and Development Council



YBhg Datu Ronnie Edward
Head of Council
Council for Native Customs and Traditions

COMMITTEES UNDER THE COUNCIL

Disciplinary Committee - Management and Professional Group

CHAIRMAN



YB Datuk Amar Jaul Samion
Sarawak State Secretary
2020 - 2022



YB Datuk Amar Haji Mohamad Abu Bakar Bin Marzuki
Sarawak State Secretary
w.e.f. 1st July 2022

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State Attorney General



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Permanent Secretary
Ministry of Education, Innovation and Talent Development
2020 - 2022



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Permanent Secretary
Ministry of Education, Innovation and Talent Development
w.e.f. 1st November 2022



YBhg Datu Dr Muhammad Abdullah Bin Haji Zaidel
Deputy State Secretary
(Economic Planning and Development)
w.e.f. 1st July 2022

COMMITTEES UNDER THE COUNCIL

Disciplinary Committee - Support Group

CHAIRMAN



Dr Alvin Chai Lian Kuet
Director
Department of Agriculture Sarawak
2018 - 2022



Mr Dominic Anak Chunggat
Director
Department of Agriculture Sarawak
w.e.f. 15th March 2022

MEMBERS



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Director of Forests
Forest Department Sarawak



YBhg Datu Haji Ismail Bin Mohamad Hanis
Director
Human Resource Development and Management Unit



Dr Yeo Tiong Chia
Chief Executive Officer
Sarawak Biodiversity Centre

COMMITTEES UNDER THE COUNCIL

Disciplinary Appeal Committee - Management & Professional Group

CHAIRMAN



YB Datuk Roland Sagah Wee Inn
Minister
Ministry of Education, Innovation and Talent Development

MEMBERS



YBhg Dato Sri Dr Wan Lizozman Bin Wan Omar
State Financial Secretary



YBhg Datu Hamden Bin Haji Mohammad
Director of Forests
Forest Department Sarawak

COMMITTEES UNDER THE COUNCIL

Disciplinary Appeal Committee - Support Group

CHAIRMAN



YBhg Datu Kameri Bin Haji Affandi
Permanent Secretary
Ministry of Education, Innovation and Talent Development
2020 - 2022



Tuan Haji Azmi Bin Haji Bujang
Permanent Secretary
Ministry of Education, Innovation and Talent Development
w.e.f. 1st November 2022

MEMBERS



YBhg Dato Sri Dr Wan Lizozman Bin Wan Omar
State Financial Secretary

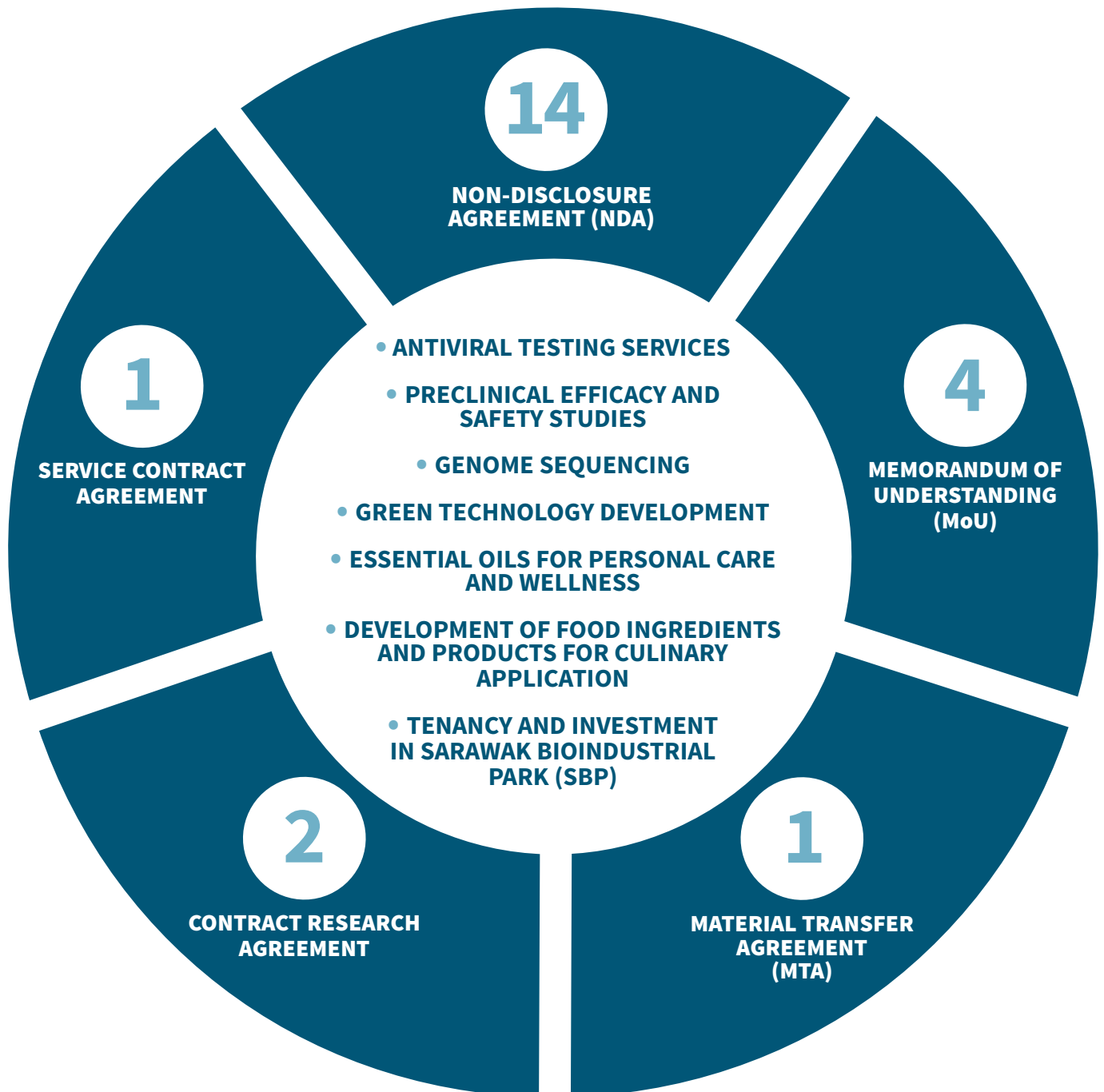


Mdm Peggy Anak Ronin Edin
Controller of Environmental Quality
Natural Resources and Environment Board



HIGHLIGHTS

NETWORKING



FUNDING



TERAJU funds the project entitled “Improving Sarawakian Indigenous Community Livelihoods Through Sustainable Production and Commercialisation of LitSara®” from year 2021 to 2026 to improve the livelihood of the community through the enhancement and expansion of the infrastructures in the production of LitSara® oil from Litsea cubeba, to develop new products as well as to enhance the marketing and commercialisation of LitSara® products while promoting continuous preservation of traditional knowledge and conservation of the biological resources.

The screening of SBC’s Natural Product Library for anti-SARS-CoV-2 small molecules is funded by the Sarawak Research and Development Council (SRDC) through a Thematic Programme for a period of 3 years from year 2022 to 2024. The team has screened over 2,500 samples and has presently isolate three potential three inhibitors compounds from two plants and one fungi species.



Through collaborative efforts, SBC and University of Kent have applied for an Engineering and Physical Sciences Research Council (EPSRC) Grant, which was approved for a period of 6 months from September 2021 to March 2022. The grant funded the collaboration in identifying indigenous plants from Sarawak for the development of anti-cancer agents from a preliminary screening of 273 extracts.

The construction of a 5-Hectare microalgae cultivation facility is funded from the year 2021 to 2023 through Chitose Laboratory Corporation, Japan by the New Energy and Industrial Technology Development Organisation (NEDO), Japan based on a project: Development of production technologies for biojet fuels/Research and Development on Establishment of a LargeScale Microalgae Cultivation Facility by Applying Flexible-Plastic-Film-Type Photobioreactor Technologies and Large-Scale Demonstration of Long-Term Cultivation Utilizing Flue Gas from a Power Plant Under Tropical Outdoor Conditions. This is a collaboration between Sarawak Biodiversity Centre (SBC), Sarawak Energy Berhad (SEB), and Chitose Laboratory Corporation, Japan.



Empowered lives.
Resilient nations.

United Nations Development Programme (UNDP) Orang Asli/Asal Micro Grant Facility for Conservation and Livelihood Project funded a project from year 2020 to 2022 entitled “Strengthening Community-Based Enterprise in Conservation and Commercialisation of Products Developed from Traditional Knowledge Based on Access and Benefit Sharing Among the Bidayuh of Kampung Semadang, Penrissen and Iban of Rumah Simon, Lubok Antu, Sarawak”.

To further its ongoing commitment on corporate social responsibility, Mitsubishi Corporation Japan is providing funding through its wholly owned subsidiary from year 2021 to 2024, Diamond Gas Holdings Sdn Bhd, to support SBC in driving innovations in green technology and advancing sustainable renewable energy production alternatives.



PUBLIC OUTREACH

BIODIVERSITY DAY 2022 IN CONJUNCTION WITH THE INTERNATIONAL DAY FOR BIOLOGICAL DIVERSITY

This year, SBC's Biodiversity Day focused on bringing awareness to science, technology and mathematics. Such activities are important to support Sarawak's effort to achieve the target of 60 per cent of students enrolling in the (STEM) classes by 2030 as planned under the Post COVID-19 Development Strategy (PCDS 2030).

The International Day for Biological Diversity is celebrated every year on May 22nd. In 2022, it was celebrated under the theme of "Building a Shared Future for All Life".



The slogan conveys a message that "Biodiversity remains the answer to several sustainable development challenges". From nature-based solutions to climate, health issues, food and water security and sustainable livelihoods, biodiversity is the foundation upon which we can build back better according to the Convention on Biological Diversity (CBD).

In 2022, we received a total of 912 visitors, including students from schools, universities, and the public.



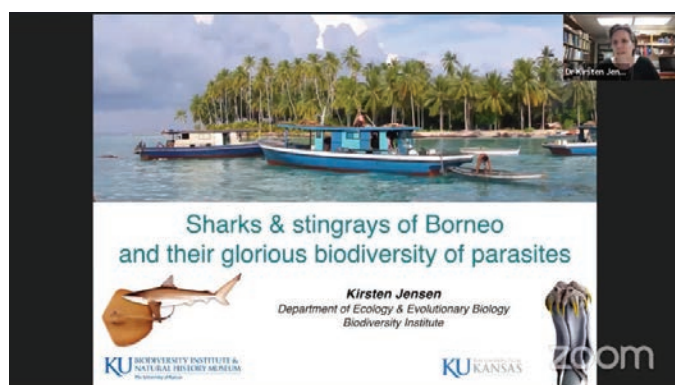
PUBLIC OUTREACH

WEBINARS AND PUBLIC TALKS



16th March 2022 - Webinar on Seagrass Ecology & Diversity by Professor Dr Muta Harah Zakaria, Professor at the Department of Aquaculture, Faculty of Agriculture, Universiti Putra Malaysia (UPM).

Professor Dr Muta shared interesting findings on seagrass distribution and its status, with a particular emphasis on habitat losses and the various threats that seagrass in Malaysia faced. Additionally, Professor Dr Muta spoke about the significance of seagrass in terms of its ecological functions, role as a source of food, and its importance as a crucial reservoir of coastal biodiversity.



23rd March 2022 - Webinar on Sharks & Stingrays of Borneo and their Glorious Biodiversity of Parasites by Professor Dr Kirsten Jensen, Professor, Department of Ecology and Evolutionary Biology & Senior Curator, Invertebrate Zoology, Biodiversity Institutes, University of Kansas.

Professor Dr Jensen spoke on the diversity of Borneo's sharks, stingrays and highlighted discoveries made from this region. The session also featured a look inside these amazing marine animals' intestines, uncovering the unexpectedly intriguing realm of parasites and their spectacular diversity, complex life cycles, and the beneficial nature of the intimate associations between tapeworms and their hosts.

PUBLIC OUTREACH

WEBINARS AND PUBLIC TALKS



18th May 2022 - Webinar on Borneo's Hidden Biodiversity by Professor Dr Janine N. Caira, Board of Trustees Distinguished Professor, Ecology & Evolutionary Biology & Director, Connecticut State Museum of Natural History, University of Connecticut.

Professor Dr Caira revealed the remarkable and unexpected beauty of the vast diversity of parasites that lived inside sharks, stingrays, and guitarfish of Borneo. The session featured a unique glimpse into the world of parasites, essentially all new to science, and participants learned what parasites could tell us about the diversity and biology of their shark and stingray hosts.



30th June 2022 - Webinar on Herbal Research and Development for Medicinal Claims by Professor Dr Jamia Azdina Jamal, Drug and Herbal Research Centre, Faculty of Pharmacy, Centre for IDEA.

The webinar explored the modern and innovative applications that had been deployed to evaluate the quality, safety, and efficacy of herbal products, with the aim of establishing the authenticity of these products before commercialisation. Professor Dr Jamia also shed light on the scientific rationale for benefit and risk analysis, as well as the regulatory approval process, especially in the context of herbal medicines.



13th July 2022 - Public Talk on Technology Triage: How to Assess the Prospects of Commercialising a Project by Professor Philip Mendes, Director, Opteon Services Pty Limited, Adj. Professor Queensland University of Technology, Brisbane, Australia.

The talk explored whether a project merited investment of commercialisation resources and learned the methods to assess a project's excellent or poor chances of success if commercialised. The talk also dealt with the criteria used to decide how projects could be prioritised for investment or whether they should be discontinued.

PUBLIC OUTREACH

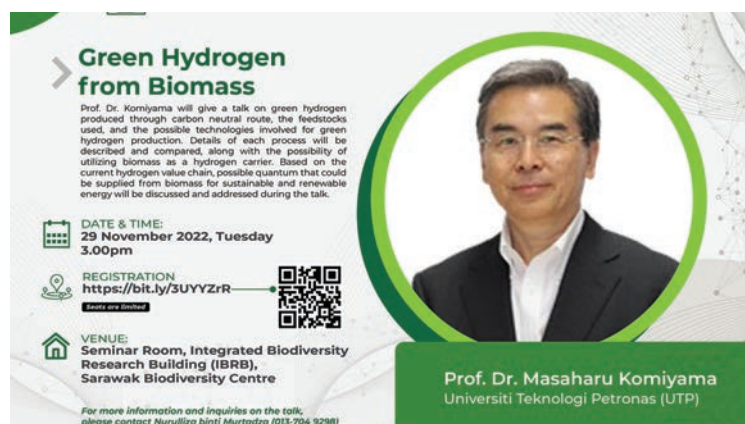
WEBINARS AND PUBLIC TALKS



22nd September 2022 - Webinar on Biotechnology and Biodiversity towards a Sustainable High-Tech Nation, Creating Systemic Change to Deliver Value by Pn Hazami Habib, Chief Executive Officer, Academy of Sciences Malaysia (ASM).

Participants were given a comprehensive overview of the 10-10 MySTIE framework, which encompasses ten technology drivers, ten socio-economic sectors, and thirty niche areas targeted for development over the next five to ten years. The webinar also showcased pilot projects like Precision Biodiversity, which serves as a replicable model for state-level land and biodiversity management.

Puan Hazami also highlighted the National Planetary Health Action Plan 2030, emphasising its role in driving innovative solutions to tackle challenges in achieving the 17 Sustainable Development Goals (SDGs). The discussion shed light on how the plan can inspire new ideas and initiatives that align with sustainable development objectives.



29th November 2022 - Talk on Green Hydrogen from Biomass by Professor Dr Masaharu Komiyama, Universiti Teknologi PETRONAS (UTP).

Professor Dr Komiyama gave a talk on green hydrogen produced through a carbon-neutral route, the feedstocks used, and the possible technologies involved in green hydrogen production. Details of each process were described and compared, along with the possibility of utilising biomass as a hydrogen carrier. Based on the then-current hydrogen value chain, the potential quantum that could be supplied from biomass for sustainable and renewable energy was discussed and addressed during the talk.

PUBLIC OUTREACH

EXHIBITIONS

25th - 27th March 2022 - Gardenscapes: A Gardening & Farming Expo “Let’s be Soilmates” at CityONE Megamall, Kuching.

Gardenscapes Sarawak was an expo event that presented a collection of products from a variety of brands as part of the ultimate experience for the agriculture industry, organised by Place Borneo. SBC was part of the exhibition and showcased indigenous plants, featuring products derived from the *Litsea cubeba* plant.



21st - 22nd June 2022 - International Digital Economy Conference Sarawak 2022 (IDECS) “Decoding Big Data for Environmental & Energy Sustainability”, Borneo Convention Centre Kuching (BCKK).

SBC took part as an exhibitor at the IDECS event, where we highlighted our involvement in the sustainable microalgae industry and presented the vision for the future of the Sarawak Bioindustrial Park.



23rd June 2022 - Sarawak Oil and Gas Services and Equipment Roadshow (OGSE) 2022, Borneo Convention Centre Kuching (BCKK), Kuching.

The two-day inaugural Sarawak Oil & Gas Services and Equipment (OGSE) Roadshow in 2022 was officiated by Deputy Minister of Energy and Environmental Sustainability, Dr Hazland Abang Hipni.

This event specifically aimed to generate awareness about the National OGSE Industry Blueprint (OGSE Blueprint) for the year 2021 to 2030, which had been launched in April 2021.



PUBLIC OUTREACH

EXHIBITIONS

2nd - 3rd August 2022 - Malaysia Innovates Summit organised by the Prime Minister's Department (EPU, JPM) and the United Nations Development Programme (UNDP), Malaysia International Trade and Exhibition Centre (MITEC), Kuala Lumpur.

The summit was officiated by the Prime Minister of Malaysia, YAB Dato' Sri Ismail Sabri bin Yaakob and organised by Research Management Unit, Manufacturing Industry, Science and Technology Division (RMU, BIPST), Economic Planning Unit, Prime Minister's Department (EPU, JPM), and the United Nations Development Programme (UNDP).

The summit sought to initiate a broad policy perspective on Commercialisation and Innovation (C&I) policy practices based on experiences drawn from the country's innovation systems with particular focus on investment initiatives, networks and platforms for higher rates of technical and social innovations to be scaled up for the public's benefits.

The event significantly expanded SBC's network, establishing connections with a number of government agencies such as EPU, UNDP, SIRIM, FRIM, as well as other private-sector entities.



25th - 31st August 2022 - Karnival Bumi Kenyalang 2022 & Kempen Beli Barang Malaysia organised by the Ministry of International Trade, Industry and Investment Sarawak (MINTRED) and AEON Co. (M) Bhd. at AEON Mall, Shah Alam, Selangor.

This event was co-organised by the Ministry of International Trade, Industry, and Investment Sarawak (MINTRED) and AEON CO. (M) Bhd. and it was aimed to promote Sarawak's local products and facilitate collaboration and partnership of Sarawakian entrepreneurs with business in Malaysia.



PUBLIC OUTREACH

EXHIBITIONS

2nd - 4th September 2022 - 35th Lun Bawang Festival (Pesta Lun Bawang) organised by Lun Bawang Association Sarawak (PLBS), Dataran Bandar Lawas.

During 35th Lun Bawang Festival, SBC was honoured to witness the representatives of Lun Bawang Communities (Long Telingan, Long Kerebangan of Lawas & Long Rusu, Ba'Kelalan) under the LitSara® Project receiving their Special Recognition Award given by the Lun Bawang Association Sarawak (PLBS) presented by YB Dato' Henry Sum Agong, Deputy Minister of Transport.

These three communities are blessed with breathtakingly views and biodiversity that shared a common resource, the *Litsea cubeba* tree which each community traditionally used for its culinary and healing properties.



15th October 2022 - Program Lan Berambéh Anak Sarawak 2022, Malaysia International Trade and Exhibition Centre (MITEC), Kuala Lumpur.

The objective of the event was to strengthen the bond between Sarawakians living in Peninsular Malaysia, leaders from the Sarawak government, and other government officials.

One of the key highlights of the event was an exhibition organised by various Sarawak agencies, which showcased their initiatives related to the Post COVID-19 Development Strategy (PCDS 2030).



PUBLIC OUTREACH

EXHIBITIONS

3rd November 2022 - Green Future Sarawak Exhibition and Conference 2022, Borneo Cultures Museum, Kuching.

This event served as a platform to explore environmental sustainability and sustainable economies by bringing together a diverse community of industry experts, leaders, academicians, and government officials to share their valuable insights and knowledge.

The exhibition and conference were officiated by YBhg Datu Hii Chang Kee, the Permanent Secretary of the Minister of Tourism, Creative Industry, Performing Arts, Sarawak.



LITSARA® TRADITIONAL WISDOM TOUR

In 2022, SBC reintroduced the LitSara® Traditional Wisdom Tour after a two-year hiatus. This tour is designed to engage and stimulate the participants' sight, smell, and tactile senses (SSF). The tour offers a unique experience based on an indigenous interpretive tour of SBC's Ethnobotanical Garden which boasts of plants close to the hearts of indigenous communities in Sarawak. During the tour, participants had the opportunity to indulge in a sensory journey through a diverse selection of aromatic essential oils. This activity included participants taking home a wonderful memento from the tour.



PUBLIC OUTREACH

21st October 2022 - LINTEC Industries - Corporate Social Responsibility Programme at Adenosma Farm, Kampung Semadang.

A total of 46 staff from LINTEC, the AdenoSara® Project Community of the Bidayuh Community, Kampung Semadang, and SBC staff put in their efforts to plant new batches of *Adenosma* seedlings, as part of LINTEC's global CSR initiative to protect the environment through biodiversity conservation activities.

The team carried out activities to arrange bricks for planting beds, weeds, and planted *Adenosma* seedlings while enjoying the beauty of the limestone hill in the background.

LINTEC is a leading company in the fields of adhesive products and specialty papers. The company handed over their sponsored items, such as weed mats, compost, topsoil, grass scythes, and cloth gloves, to the AdenoSara® Project Community to be utilised for the farm and support the community's traditional knowledge.



AWARENESS SCHOOL OUTREACH PROGRAMME

29th October 2022 - SMK Batu Lintang Co-curriculum Carnival 2022.

SBC Awareness Outreach Programme, participated in the SMK Batu Lintang Co-curriculum Carnival 2022.

The students were excited throughout the carnival, as they eagerly participated in SBC's science-based hands-on activities. These activities included learning basic techniques of plant tissue culture and creating their own DIY aromatherapy oil to take home. By providing these interactive experiences, we aimed to encourage the students to further explore STEM-related subjects and expand their scientific knowledge.





COMMERCIALISATION OF RESEARCH

COMMERCIALISATION OF RESEARCH

Commercialisation of Sarawak's Very Own Ganoderma

Sarawak is known for its rich biodiversity and Ganoderma is one of the many fungi found in Sarawak. It is a genus that includes several species such as *Ganoderma lucidum*, also known as lingzhi or reishi. These fungi are known for their medicinal properties and have been used in traditional medicine in many parts of the world, including Asia.

SBC established a strategic partnership with OrGano AgariTech Sdn. Bhd. to discover Sarawak's Ganoderma that can be developed into commercialised products for various applications in cosmeceutical, nutraceutical, and pharmaceutical industries. Through the strategic partnership, a facility to cultivate, harvest and process the Ganoderma was set up at SBC on 24th September 2022. SBC and the development of local Ganoderma is conducted with stringent quality control and testing of the material for formulating and manufacturing purposes. Five (5) species of Ganoderma have been identified as candidates to be cultivated at the current facility to assess its commercial value.

The development of Sarawak's Ganoderma product supports economic growth and is aligned with the Post COVID-19 Development Strategy (PCDS 2030), to contribute to the economic prosperity of Sarawak.

Production of fruiting body Ganoderma spp. in greenhouse control system



COMMERCIALISATION OF RESEARCH



Artist impressions of The Central Hub

The Sarawak Bioindustrial Park (SBP)

Sarawak's abundant biodiversity bestows upon its significant untapped potential and the capability to lead the development of the bioeconomy, bridging the gap from natural habitats to laboratories and eventually to the global market. The Sarawak Government has allocated funding for a catalytic initiative under the Post COVID-19 Development Strategy (PCDS 2030), known as the Sarawak Bioindustrial Park (SBP). Situated in Kota Samarahan, SBP is dedicated to nurturing bio-based industries across five specialized sectors: Bioactives, Biohealth, Biomaterials, Bioenergy, and Bioenvironmental, thereby advancing the bioeconomy in Sarawak.

The SBP development plans include a Central Hub equipped with shared infrastructure and the provision of 25 industrial lots available for lease to tenants in four phases. The current blueprint specifies individual industrial lots ranging from 1 to 4 acres, totaling 25 lots. Considering that the growth of biodiversity-based industries is in its initial stages, SBP is anticipated to be a pivotal driving force. Early investors in the park are expected to comprise newcomers to the industry or those targeting the Sarawak market.

The physical construction of SBP commenced in 2022 during the design phase, which involves finalizing architectural and engineering plans, including detailed blueprints and specifications. The construction of the Central Hub is slated to begin in Quarter 3 of 2024 and is projected to be completed by Quarter 3 of 2026. The Central Hub has been designed to cater to the research needs and requests of industrial tenants focusing on their bioproducts.

COMMERCIALISATION OF RESEARCH

Feasibility Study on Setting Up a Company with Good Manufacturing Practice (GMP) Certification.

Under the 12th Malaysian Plan, a development project received approval for SBC to establish a GMP Certified Facility for nutraceuticals in Sarawak. A feasibility study was conducted to assess the viability of such a facility and a sustainable business model.

The study includes an analysis of the readiness of the nutraceutical industry in Sarawak. Given the increasing global demand for health supplements from health-conscious consumers, the need for Sarawak to have its own GMP certified manufacturing facility for health supplements is significant.

Considering the substantial cost associated with establishing this facility, SBC is exploring options such as public-private partnerships or a consortium model for Sarawak's nutraceutical industry.



Artist impression of the GMP Certified Facility for Nutraceutical



WORKING WITH COMMUNITIES

WORKING WITH COMMUNITIES

Preserving Traditional Knowledge through Documentation

SBC continued its efforts to document traditional knowledge related to plants and their uses through its Traditional Knowledge (TK) Documentation Programme. The programme aims to preserve and promote traditional knowledge that has been passed down through generations among indigenous communities. By documenting and sharing this knowledge, SBC hopes to raise awareness of the cultural and economic value of these traditional practices and contribute to the sustainable use of natural resources.

To date, SBC has conducted TK Documentation Workshops/Field work at 112 villages/areas (among 24 ethnic communities) and TK Consultative Meetings at 84 areas in Sarawak since the programme began in 2002. Out of these, 6,957 plants have been collected and documented.



Voice recording using handphone on useful plants from Kampung Tinting Tuba, Gedong

The programme involves working closely with community members to identify and document the usage of plants for food, medicine, and cultural practices. The information collected is compiled into the Laboratory Information Management System database at SBC.

Eight (8) Ethnobotanical Research Consultative Meetings with community leaders

No	Date	Location	Community Involved
1	1 st February 2022	Sadong Sub-District Office	Malay and Bugis
2	22 nd February 2022	Pusa Sub-District Office	Iban
3	1 st March 2022	Meradong Sub-District Office	Malay, Melanau and Iban
4	4 th April 2022	Sibu District Office (Rajang area)	Iban
5	12 th April 2022	Kompleks Islam Sarawak Miri (Beluru District)	Sebob
6	10 th May 2022	Daro District Office	Melanau and Iban
7	2 nd September 2022	Telang Usan District Office	Kenyah
8	28 th October 2022	Gedong Sub-District Office	Iban and Malay

WORKING WITH COMMUNITIES

Eight (8) 1st Ethnobotanical Research Workshops

No	Date	Location	Community Involved
1	18 th - 21 st January 2022	Kampung Sepaya Ulu, Batang Air, Lubok Antu, Sri Aman	Iban
2	14 th - 17 th February 2022	Long Semado, Lawas, Limbang	Lun Bawang
3	18 th - 21 st April 2022	Kampung Sebobok, Bau, Kuching	Bidayuh
4	7 th - 10 th June 2022	Kampung Kuala Tutoh, Marudi, Miri	Kiput
5	7 th - 10 th June 2022	Uma Seping, Long Koyan, Sg Asap, Belaga, Kapit	Seping
6	2 nd - 5 th August 2022	Rumah Lidi, Ulu Debak, Betong	Iban
7	24 th - 28 th September 2022	Kampung Penibong, Pulau Bruit, Daro, Mukah	Melanau
8	22 nd - 24 th November 2022	Kampung Tinting Tuba, Gedong, Samarahan	Iban

Six (6) Ethnobotanical Research Follow-Up Trips

No	Date	Location	Community Involved
1	7 th - 10 th February 2022	Rumah Ajan, Merapok, Lawas, Limbang	Kedayan
2	28 th February - 3 rd March 2022	Kampung Jagoi Duyoh, Bau, Kuching	Bidayuh
3	7 th - 10 th March 2022	Long Banga, Baram, Miri	Saban
4	14 th - 17 th March 2022	Kampung Jebungan, Mukah	Melanau
5	22 nd - 25 th March 2022	Kampung Bako Hilir, Kuching	Melayu
6	18 th - 21 st April 2022	Rumah Edmund, Kanowit, Sibu (previously known as Rumah Charlie)	Iban

WORKING WITH COMMUNITIES

The number of plants documented and collected:

Community	No	Location	Number of plants documented	
BIDAYUH	1	Kampung Duyoh, Bung Jagoi, Bau, Kuching	46	1,284
	2	Kampung Kiding, Padawan, Kuching	530	
	3	Kampung Semadang, Penrissen, Kuching	311	
	4	Kampung Semban, Padawan, Kuching	124	
	5	Kampung Serin, Serian	17	
	6	Kampung Lanchang, Serian	59	
	7	Kampung Simuti, Padawan, Kuching	50	
	8	Kampung Chupak & Skuduk, Siburan, Serian	14	
	9	Kampung Peninjau Lama, Serumbu, Bau, Kuching	48	
	10	Kampung Tringgis, Bau, Kuching	16	
	11	Kampung Tepoi, Tebedu, Serian	13	
	12	Kampung Rejoy, Padawan, Kuching	12	
	13	Kampung Bra' ang Timurang, Padawan, Kuching	17	
	14	Kampung Sebobok, Bau, Kuching	27	
IBAN	1	Rumah Skatap, Betong	276	1,650
	2	Rumah Janang (previously known as Rumah Nyambong), Selangau, Sibu	89	
	3	Rumah Emak, Kapit	89	
	4	Rumah Changai, Song, Kuching	86	
	5	Rumah Simon/Rumah Baia Panjai, Batang Ai, Lubok Antu, Sri Aman	86	
	6	Rumah Patric (previously known as Rumah Bana), Sebauh, Bintulu	86	
	7	Rumah Roland (previously known as Rumah Lulut), Kapit	55	
	8	Rumah Rapak Tepus, Pantu, Sri Aman	54	
	9	Rumah Bajau, Julau, Sarikei	71	
	10	Rumah Ngumbang, Nanga Sumpa, Batang Ai, Sri Aman	32	
	11	Kampung Sual, Simunjan, Samarahan	53	
	12	Ulu Mentawai expedition, Limbang	51	
	13	Rumah Entakong, Nanga Medamit, Limbang	54	
	14	Rumah Misoon, Sibuti, Miri	45	
	15	Kampung Sungai Rama, Sebuyau, Samarahan	48	
	16	Karangan Mong, Lubok Antu, Sri Aman	33	
	17	Rumah Kino, Lubok Antu, Sri Aman	39	
	18	Rumah Tanjung Baru, Maludam, Betong	16	
	19	Kampung Jambu Kelampak, Ulu Laya, Betong	16	
	20	Rumah Sabang Babang, Krian, Saratok, Sarikei	14	
	21	Rumah Charlie, Nanga Melipis, Kanowit, Sibu	14	
	22	Rumah Abok/Kampung Mulong, Beluru, Miri	20	
	23	Rumah Encharang, Banting, Lingga, Sri Aman	53	
	24	Kampung Pulau Sibau, Balleh, Kapit	52	
	25	Rumah Nyalong, Pakan, Sarikei	34	
	26	Rumah Tengah (Marcus Minggu), Tinjar, Sg Peking, Tinjar, Miri	17	
	27	Rumah Machup, Roban, Betong	18	
	28	Rumah Kenedy, Beletik Undop, Sri Aman	23	
	29	Kampung Terasi Iban, Sadong Jaya, Samarahan	14	
	30	Kampung Semada, Gedong, Serian	21	
	31	Kampung Engkeranji, Sri Aman	23	
	32	Kampung Sepaya Ulu, Batang Air, Lubok Antu, Sri Aman	27	
	33	Rumah Lidi, Ulu Debak, Betong	30	
	34	Kampung Tinting Tuba, Gedong, Samarahan	11	

WORKING WITH COMMUNITIES

The number of plants documented and collected based on the ethnic communities

Community	No	Location	Number of plants documented	
KAYAN	1	Rumah Lesong, Sungai Asap, Belaga, Kapit	81	251
	2	Long Bedian, Baram, Miri	75	
	3	Uma Bawang, Long Lama, Baram, Miri	29	
	4	Long Amo, Belaga, Kapit	66	
KELABIT	1	Pa' Derung, Bario, Miri	12	500
	2	Pa' Lungan, Bario, Miri	303	
	3	Pa' Ukat, Bario, Miri	163	
	4	Long Lellang, Baram	22	
KENYAH	1	Long Pelutan, Baram, Miri	127	303
	2	Long Ikang, Marudi, Miri	79	
	3	Long Palai, Baram, Miri	31	
	4	Long Apu, Baram, Miri	14	
	5	Uma Kelep, Sungai Asap, Belaga, Kapit	52	
LUN BAWANG	1	Ba' Kelalan, Lawas, Limbang	48	702
	2	Long Kerebangan, Lawas, Limbang	184	
	3	Long Telingan, Lawas, Limbang	120	
	4	Long Sebangang Asal, Lawas, Limbang	49	
	5	Long Tuyu/Paya Maga Expedition, Lawas, Limbang	137	
	6	Long Tuyu/Long Sukang, Lawas, Limbang	59	
	7	Pa' Berunut, Lawas, Limbang	20	
	8	Long Tuan, Trusan, Lawas, Limbang	23	
	9	Kampung Long Kachu, Trusan, Lawas, Limbang	30	
	10	Kampung Long Semadoh, Lawas	32	
MELANAU	1	Kampung Jebungan, Mukah	96	269
	2	Kampung Pangtray, Daro, Mukah	48	
	3	Kampung Jemoreng, Matu, Mukah	30	
	4	Kampung Paloh, Belawai, Mukah	37	
	5	Kampung Igan, Mukah	21	
	6	Kampung Tanam, Dalat, Mukah	20	
	7	Kampung Penibong, Pulau Bruit	17	
PENAN	1	Long Iman, Mulu, Marudi, Miri	538	1,112
	2	Batu Bungan, Mulu, Marudi, Miri	452	
	3	Long Latei, Long Bedian, Marudi, Miri	6	
	4	Long Wat, Murum, Bintulu	51	
	5	Long Seridan, Baram, Miri	9	
	6	Long Malim, Murum, Bintulu	38	
	7	Long Sayan, Long Lama, Apoh Baram, Miri	18	

WORKING WITH COMMUNITIES

The number of plants documented and collected based on the ethnic communities

Community	No	Location	Number of plants documented	
PUNAN	1	Rumah Ado, Tatau, Bintulu	39	39
SELAKO	1 2	Kampung Pueh, Sematan, Kuching Kampung Temaga Dayak, Sematan, Kuching	112 25	137
KEDAYAN	1	Rumah Ajan, Merapok area, Lawas, Limbang (with Iban & Lun Bawang communities)	85	85
TABUN	1	Kampung Kuala Medalam, Nanga Mendamit, Limbang	51	51
BISAYA	1	Kampung Bidang, Limbang	30	30
MALAY	1 2 3 4 5 6 7 8	Sundar, Lawas, Limbang (with Lun Bawang & Chinese) Maludam area, Maludam, Betong (with Iban community) Kampung Hulu, Bako, Kuching Kampung Hilir, Bako, Kuching Sebuyau area, Samarahan Kampung Pasir Pandak, Santubong, Kuching Kampung Selabat/ Pasir Putih, Muara Tebas, Kuching Kampung Bangka Semong, Muara Tuang, Samarahan	38 25 30 48 28 24 20	213
BAGATAN	1	Rumah Seking, Nanga Merit, Kapit	35	35
SA'BAN	1	Long Banga, Marudi, Miri (including expedition)	79	79
SEKAPAN	1	Kampung Sekapan Piit, Belaga, Kapit	33	33
TANJONG	1	Kampung Man Ili, Kapit	24	24
TAGAL	1	Long Tengoa, Lawas, Limbang	20	20
BERAWAN	1	Long Terawan, Mulu, Miri	22	22
KEJAMAN	1	Kampung Kejaman Lasah, Belaga, Kapit	39	39
LAHANAN	1	Kampung Lahanan, Belaga, Kapit	30	30
KIPUT	1	Kampung Kuala Tutoh, Marudi, Miri	19	19
SEPING	1	Uma Seping, Long Koyan, Sungai Asap, Belaga, Kapit	30	30
Total Number of Plants Collected			6,957	

WORKING WITH COMMUNITIES

LITSARA® ESSENTIAL OIL PROJECT

The LitSara® project is an excellent demonstration of how the local communities' income can be increased based on traditional knowledge and sustainable practices. The *Litsea* plant, which is indigenous to Sarawak, has been utilised by local communities for flavouring and medicinal purposes for many generations. In 2005, the discovery of the plant at Long Telingan in Lawas, a Lun Bawang village, marked a significant breakthrough that led to commercialisation, forming the foundation for the establishment of the LitSara® brand.



WORKING WITH COMMUNITIES



The fruits and flowers of Litsea cubeba



LitSara® products available at Choice Supermarket, conveniently located in La Promenade Mall, Kota Samarahan

The collaboration with the local communities in this project is aimed at safeguarding their traditional knowledge and creating a value chain for the useful plants. This approach led to a new series of personal care goods as well as boosting the local communities' financial income. The project is aligned with Post COVID-19 Development Strategy (PCDS 2030), which aims to achieve economic prosperity by 2030. In 2022, a special hair conditioner was developed to pair with the customer's favourite shampoo adding to the LitSara® range of products that are available through LitSara® website (<https://www.litsara.com>), e-commerce platform (<https://shopee.com.my>), and local retailers. Improvement of the LitSara® body oil formulation was made specially for spa and wellness. The *Litsea cubeba* leaf oil was also registered as a cosmetic and personal care product ingredient in the International Nomenclature of Cosmetic Ingredient (INCI) Library.

WORKING WITH COMMUNITIES



The Lun Bawang community hailing from Long Rusu, Ba'Kelalan, officially participated with the LitSara® project in year 2022

The six villages, comprising the Bidayuh community from Kampung Kiding, the Lun Bawang community from Long Telingan, Long Kerebangan, and Long Rusu, and the Kelabit community from Pa' Ukat and Pa' Lungan, produced 513 litres of essential oil in 2022. As a result, the communities received more than RM360,000.00 of monetary benefits from this project. The LitSara® oil production has now increased and gained awareness.

By advocating sustainable cultivation practices, the project ensures that the harvest of the Sarawak *Litsea* tree has minimal environmental impact. This is critical for the project's long-term sustainability and local environmental preservation. Additionally, it ensures that the local communities will have a dependable and sustainable source of income in future.

The LitSara® initiative has made significant progress in Malaysia because of the importance of Access and Benefit Sharing (ABS) in the context of Traditional Knowledge (TK) associated with genetic resources. The ABS agreement, which is the first of its kind in Malaysia, reflects the recognition of the invaluable role of indigenous communities in contributing to the discoveries and applications derived from the biodiversity.



Litsea cubeba plantation at Kampung Kiding

WORKING WITH COMMUNITIES

Preserving Traditional Knowledge Through Documentation

Benefit Sharing Agreement (BSA) on LitSara® Project

As part of the BSA under LitSara®, the communities provide essential oil for the production of LitSara® products. In return, the communities receive royalties or Indigenous Knowledge Benefit Sharing (IKBS) based on the total sales of the products.

The first BSA was signed on 20th March 2019 between SBC and five communities, including the Bidayuh of Kampung Kiding in Padawan, the Lun Bawang of Long Kerebangan and Long Telingan in Lawas, and the Kelabits of Pa' Ukat and Pa' Lungan in Bario. The agreement was effective for three years, from 1st January 2019 to 31st December 2021. It was supported by United Nations Development Programme (UNDP) / The Global Environment Facility (GEF) funding.

Throughout the project, SBC carried out a series of capacity buildings in sustainable harvesting using Good Wild Craft Practices, propagation of the plant and conducted on-site distillation. The five (5) communities together supplied 860 liters of essential oil.

YB Datuk Roland Sagah Wee Inn, along with Council Members and participating LitSara® project communities, presented the showcased products at the BSA ceremony



WORKING WITH COMMUNITIES



Benefit Sharing Agreement signed with six indigenous communities - Bidayuhs of Kampung Kiding in Padawan, the Lun Bawangs of Long Rusu, Ba'Kelalan, Long Kerebangan and Long Telingan in Lawas and the Kelabits of Pa' Ukat and Pa' Lungan in Bario

Subsequently, on 21st May 2022, SBC signed a second BSA with six communities, including the Bidayuh of Kampung Kiding in Padawan, the Lun Bawangs of Long Rusu, Ba' Kelalan, Long Kerebangan, and Long Telingan in Lawas, and the Kelabits of Pa' Ukat and Pa' Lungan in Bario. The project is currently supported by TERAJU Livelihood and Dana Pembangunan Usahawan Bumiputera (DPUB) Programme for three of the villages at Long Rusu, Ba' Kelalan, Long Telingan, Lawas and Kampung Kiding.

These BSAs demonstrate SBC's commitment to implementing ABS and benefit-sharing mechanisms in collaboration with indigenous communities, ensuring that they are recognised and compensated for their traditional knowledge and contributions to biodiversity utilisation. It sets an important precedent for fair and equitable sharing of benefits arising from genetic resources and associated traditional knowledge, promoting sustainable and responsible practices in the field of biodiversity conservation and utilisation.

WORKING WITH COMMUNITIES



The community farm at Kampung Semadang and AdenoSara® products

ADENOSARA® ESSENTIAL OIL PROJECT

The AdenoSara® is a community project that demonstrates how local communities can transform a local weed into an essential oil-producing herb through sustainable community farm management. The *Adenosma nelsonioides* plant, also known as Bunga Ta'ang by the Bidayuh, and Bangkit Engkerawan by the Iban, is an aromatic herb that grows wild. The herb has been traditionally used by the Bidayuh and Iban communities to treat skin ailments and as a repellent for fleas and ticks on domestic animals. SBC discovered the traditional uses of this plant by communities at Kampung Semadang and Rumah Simon in year 2007 and 2015, respectively.

WORKING WITH COMMUNITIES



A terminal evaluation visit for OA MGF project at Rumah Simon, Lubok Antu

HIGHLIGHT OF ADENOSARA® PROJECT IN 2022

The Awareness Workshop on Conservation and Dissemination of Traditional Knowledge among the Youth of Kampung Semadang and Rumah Simon was conducted on 4th and 12th February 2022, respectively.

During the workshop, the youths played an active role in preserving their TK related to biological resources. They had created a system to converse and disseminate Traditional Knowledge through the social media platform Facebook, as part of their initiatives to promote and create awareness on nature and biodiversity.



Valestian Anak Philip, an enthusiastic youth from Kampung Semadang is taking nature photographs during the workshop

WORKING WITH COMMUNITIES



Ms Kanni Wignaraja, United Nations Assistant Secretary-General, Assistant Administrator and Director of the Regional Bureau for Asia and the Pacific with the Bidayuh Community of Kampung Semadang, showcasing the Adenosma farm and its products

On 4th August 2022, Ms Kanni Wignaraja, United Nations Assistant Secretary-General, Assistant Administrator and Director of the Regional Bureau for Asia and the Pacific arrived in Kuching, Sarawak on an official visit that included a visit to Kampung Semadang, one of the project sites funded by UNDP-MOF's Orang Asli/Orang Asal Micro-Grant Facility (OA MGF) for Conservation and Livelihood. She was joined by representatives from UNDP Malaysia, Singapore, and Brunei Darussalam, including Mr Niloy Banerjee (Resident Representative of UNDP), Mr Asfaazam Kasbani (Assistant Resident Representative for Programmes), Ms Gan Pek Chuan (Leader of Sustainable & Resilient Development), Ms Norhafiza Shafie (Development Economist), and Mr Edmund Chai Ming Lau (Project Manager from the Sustainable & Resilient Development team).

WORKING WITH COMMUNITIES



Group photo with LINTEC staff, Bidayuh Community of Kampung Semadang, and SBC staff during the corporate social responsibility outing at the Adenosma Farm in Kampung Semadang

SBC also managed to organise a hand-made soap workshop for the communities of Kampung Semadang and Rumah Simon, Lubok Antu on 26th November 2022 and 5th December 2022, respectively. During the workshop, the communities were taught the basic steps of soap-making using cold process. The workshop aimed to equip the community with new skills, empowering them to broaden their source of income through the creation and sale of hand-made soaps in the future.

In 2022, the communities of Kampung Semadang and Rumah Simon had benefited a total of RM71,125.00 by supplying AdenoSara® essential oil through a capacity-building activity.



The hand-made soap making workshop with community of Rumah Simon, Lubok Antu

WORKING WITH COMMUNITIES



Scenic view of Kampung Jemoreng

SEKIU OIL PROJECT

SBC initiated the Sekiu oil project in 2020 to assist community-based businesses in recovering from the impacts of the COVID-19 pandemic under the UNDP COVID-19 Sosio-Economic Recovery Funds. The COVID-19 pandemic has accelerated the adoption of digital technologies in many industries, including small businesses and community-based organisations. For instance, employing social media platforms to market its products or services, or utilising e-commerce platforms to showcase its products on the internet.

The project also focused on increasing the number of trees bearing seeds and improving the traditional extraction process through Industrial Revolution (IR) 4.0 aligned technology. Strategic partnerships and the use of blockchain technology ensure a reliable tracing structure throughout the supply chain of the Sekiu oil, enhancing its image as a sustainable commodity for commercialisation and market uptake.

Sekiu oil, extracted from the seed kernel of the indigenous *Madhuca motleyana* tree, is a valuable commodity that has the potential to drive socio-economic growth in the local communities of Kampung Jemoreng, Kampung Penibong and Kampung Betanak in Sarawak.

With its unique properties and potential as a functional food, the Sekiu oil can provide a source of supplementary income for the bottom 40% (B40) of low-income households, women and youth in the region, aligning with Post COVID-19 Development Strategy (PCDS 2030), Malaysia's Shared Prosperity Vision 2030 and Twelfth Malaysia Plan.

In 2022, a total of 150 liters of Sekiu oil was both produced and sold, yielding an estimated income of RM101,400.00. Notably, RM26,000.00 of this total was generated through e-commerce sales.



Sekiu oil extracted from the indigenous *Madhuca motleyana* tree

WORKING WITH COMMUNITIES



The community at Rh Janang overlooking the *Shorea macrophylla* tree

ENGKABANG PROJECT

The Engkabang project aimed to generate economic value for local communities through the sustainable management and commercialisation of Engkabang oil. The Engkabang oil was extracted from the fruit kernel of the endangered *Shorea macrophylla* tree, native to Sarawak, Malaysia.

The project involved working closely with local communities, particularly the Iban community from Rumah Bajau and Rumah Janang, who have the traditional knowledge and expertise in harvesting and processing Engkabang oil. The objective of the project is to enhance the capacity of the Iban community in sustainable resource management, oil processing, and marketing. The sale of Engkabang oil has the potential to enhance the livelihoods of local communities and contribute to poverty reduction. Moreover, it presents an opportunity for these communities to actively participate in the market economy by establishing a sustainable and inclusive market for Engkabang oil as a high-value product. When the benefits of this economic opportunity are shared fairly and equitably, it empowers local communities to achieve their full potential

WORKING WITH COMMUNITIES

Unit Peneraju Agenda Bumiputera (TERAJU) Project

Dana Pembangunan Usahawan Bumiputera (DPUB) is the Federal Government's initiative mandated to TERAJU through the Ministry of Economic Affairs (MEA). It is part of the Rancangan Malaysia Ke Sebelas (RMK 11) and the Third Rolling Plan (RP3) to enhance the Bumiputera agenda by strengthening the development of the people's inclusion and well-being.

The objectives of this project are to improve the livelihood of the community through the improvement and expansion of the infrastructures in the production of LitSara® oil from *Litsea cubeba*, to develop new products as well as to enhance the marketing and commercialisation of LitSara® products while promoting continuous preservation of traditional knowledge and conservation of the biological resources.

The total funding from TERAJU under this project is RM2,000,000.00 for a period of five (5) years. SBC signed the agreement with TERAJU in September 2021.



To date, SBC has carried out seventeen (17) follow-up trips on community farms, TK Youth Workshop, inventory trips of *Litsea cubeba*, capacity building on distillation activities, audit trips, monitoring of distillation shed and Litsea tree farms.



Special Recognition Award given by the Lun Bawang Association Sarawak (PLBS) to the representative of Lun Bawang Communities (Long Telingan, Long Kerebangan of Lawas & Long Rusu, Ba'Kelalan)

WORKING WITH COMMUNITIES

The list of working trips carried out in 2022 for TERAJU project is stated below:

No	Location	Date	Activity
1	Kampung Kiding, Padawan	26 th January 2022	Site inspection for construction of toilet & store by JKR and capacity building on the propagation of <i>Litsea cubeba</i>
		4 th February 2022	TERAJU visit to Kampung Kiding
		9 th March 2022	Farm inspection for myOrganic Certification by DOA
		29 th April 2022	Youth Workshop by Eco-Warriors
		19 th August 2022	Farm audit on myOrganic certification by DOA
		23 rd September 2022	Audit trip on LitSara® Oil Distillation with SBC Audit Committee team
		13 th October 2022	Visit of Distillation shed and <i>Litsea</i> farm by the Vision Group
		27 th October 2022	Blockchain App Demonstration and Verification of Essential Oil Programme held together with Sarawak Digital Economy Corporation (SDEC) team, Sinisana Technologies Sdn. Bhd.
		9 th December 2022	Soap making workshop
2	Long Rusu, Ba'kelalan	8 th - 9 th February 2022	TERAJU visit to Long Rusu
		24 th March 2022	Entrepreneurship workshop by MINTRED and farm inspection for myOrganic certification by DOA
		22 nd April 2022	Youth Workshop by Eco-Warriors
		15 th - 17 th August 2022	Capacity building on distillation activity and inventory of <i>Litsea cubeba</i>
3	Long Telingan, Lawas	10 th February 2022	TERAJU visit to Long Telingan
		21 st March 2022	Entrepreneurship workshop by MINTRED and farm inspection for myOrganic certification by DOA
		29 th April 2022	Youth Workshop by Eco-Warriors
		18 th - 19 th August 2022	Capacity building on distillation activity and inventory of <i>Litsea cubeba</i>



LitSara® community representatives promoting LitSara® products during Malaysia Innovate Summit

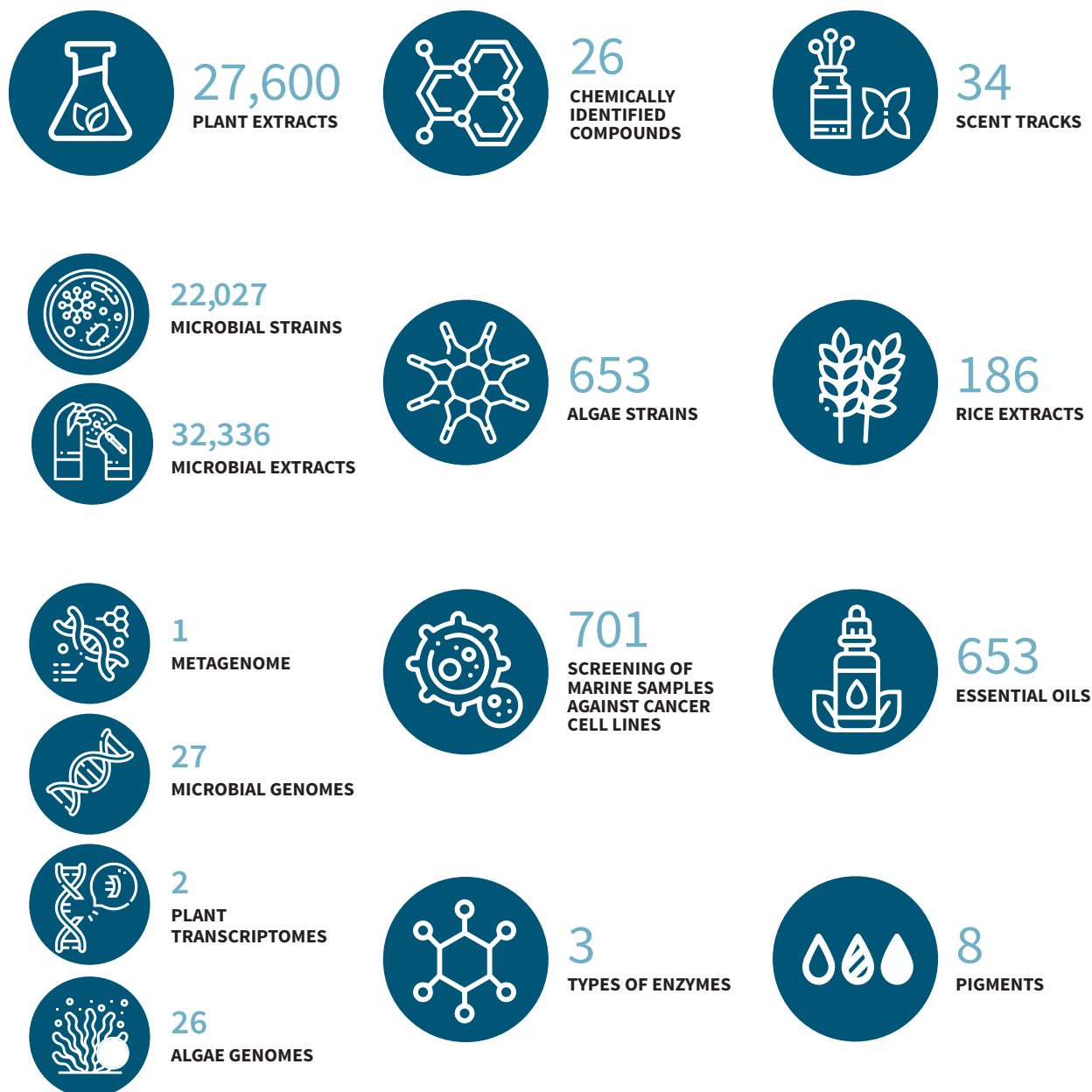
To empower the community with entrepreneurial skills and boost confidence in public speaking, communities from Kampung Kiding, Long Telingan, and Long Rusu were invited to participate in the Malaysia Innovate Summit at the Malaysia International Trade and Exhibition Centre (MITEC), Kuala Lumpur, from 2nd to 3rd August 2022, and the Pesta Irau Aco held in Lawas on 2nd to 3rd September 2022.



SUSTAINABLE BIOPROSPECTING

SUSTAINABLE BIOPROSPECTING

NATURAL PRODUCT LIBRARY - A TREASURE OF SARAWAK



SBC's Natural Product Library (NPL) was established from Sarawak's unique biodiversity which includes an impressive collection of plant resources with the traditional knowledge of the indigenous communities, and other resources such as microbials, essential oils, algae, pigments, enzymes, and genomes. Exploring Sarawak's biodiversity richness through the Natural Product Library could lead to breakthroughs in various industries such as pharmaceuticals, nutraceuticals, cosmeceuticals, and wellness products. SBC's NPL also links to an AI-assisted chemical database. In natural product discovery, AI models are used to recognise mass spectral features associated with known compounds to facilitate the identification of leads for further investigation.

SUSTAINABLE BIOPROSPECTING

SAMPLE EXTRACTION

SBC's laboratory is equipped to handle sample extraction processes ranging from small to large scale, depending on the specific requirements. The extraction method employed is determined by the nature of the sample and the desired outcome. Plant samples can be extracted using either organic or aqueous solvents, while essential oil extraction involves the utilisation of either the clevenger or hydro-distillation methods.

The extraction of oil from the seeds also contributes to the natural product library. To ensure the production of high-quality oil for product development, the seed's oil extraction process is carried out using an expeller machine. This machine, known for its solvent-free and cold-press capabilities, effectively retained the oil's quality.

Laboratory Integrated Management System or in short LIMS is used to monitor the NPL. This system allows SBC to keep track of our natural product library in a systematic manner. The plant extracts composition were profiled using High Performance Liquid Chromatography (HPLC) and quality control of essential oil is conducted using Gas Chromatography-Mass Spectrometry (GCMS).



Transforming plant samples into barcoded extracts

SBC's Natural Product Library houses more than 25,000 plants extracts and 30,000 microbial extracts



SUSTAINABLE BIOPROSPECTING



Plantlets cultured in vitro are prepared for introduction into a new environment

SUSTAINABLE RAW MATERIALS SUPPLY FOR COMMERCIALISATION OF RESEARCH

Ensuring the sustainability of raw materials for commercial products of LitSara® requires a focus on supplying planting stocks for large-scale cultivation. This crucial aspect plays an important role in maintaining a reliable source of raw materials, supporting the industry's growth and long-term viability.

In the Plant Tissue Culture Laboratory, micropropagation of *Litsea cubeba* was implemented to ensure a sustainable supply chain, enabling rapid propagation, disease-free production, year-round cultivation, resource conservation, and clonal uniformity. These advantages contribute to a consistent supply of high-quality planting stock while reducing environmental impacts and promoting long-term sustainability.

SUSTAINABLE BIOPROSPECTING



Orange pigment produced by an algae called *Scenedesmus* sp.

ALGAE AS A SUSTAINABLE SOLUTION IN THE CIRCULAR ECONOMY

Microalgae are being explored as a potential source of lutein due to their high pigment content, which can reach up to 1.2% of dry biomass weight. *Scenedesmus* sp. is one of the algae strains that is widely studied for its production of lutein, a carotenoid pigment that has numerous health benefits. This strain was isolated from freshwater at Bako National Park, Sarawak, and has been tested for its production of lutein, which has antioxidant, anti-inflammatory, and coloring properties that can be developed for functional foods, health supplements and cosmeceutical products. Lutein is also popular in the cosmetic industry, particularly in skincare, haircare, and makeup products due to its ability to promote healthy skin as well as to reduce wrinkles and fine lines. SBC is studying environmental sustainability in producing the microalgae to support Sarawak's initiatives to reduce carbon emission by at least 30% to 40% by the year 2030.



Scenedesmus sp. cultivated in 50mL flask under high light intensity

SUSTAINABLE BIOPROSPECTING

DISCOVERIES OF BIOACTIVE COMPOUNDS

Potential Anti-Parkinson Compound Derived From Nature

A collaboration with Dr Chua Pin Fen and Dr William Lim of Faculty of Medicine & Health Sciences, University Malaysia Sarawak (UNIMAS) successfully registered the copyright of a compound isolated by SBC from *Aglaia* plant species, which has neuroprotective potential. The copyright entitled “Method for screening PLT50 in a cellular Parkinson’s Disease model” was filed on 23rd September 2022. It describes a scientific approach of potential anti-Parkinson compounds using a cellular model of Parkinson’s Disease, whereby this compound was found to have the ability to restore cell viability and improve cellular morphology and cell-cell adhesion.

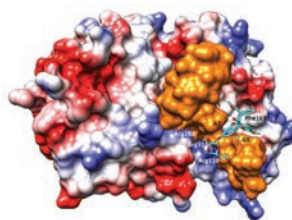
Broad Anti-Pathogen Potential of DEAD Box RNA Helicase eIF4A-targeting Rocaglates - Natural Products Derived from Aglaia genus

Broad Anti-Pathogen Potential of DEAD Box RNA Helicase eIF4A-targeting Rocaglates - Natural Products Derived from *Aglaia* genus. The collaboration with Professor Arnold Grünweller from the Philipps-Universität Marburg since 2019 was to discover the potential of rocaglates in inhibiting the early translation steps of eukaryotic initiation factor-4A (eIF4A), which is a protein that regulates cell cycle progression and causes cell death.

The study provides comprehensive sensitivity of rocaglates towards pathogens from insect, plant, animal and human, which validated the broad anti-pathogen potential of rocaglates. In addition to the eIF4A sequence variants analysis, an *in silico* as well as biochemical and in vitro analysis were also used as validation tools for the sensitivity or resistance of rocaglates towards the pathogens. A paper on this research work has been submitted to Scientific Reports on November 2022.

Screening of Small Molecule Inhibitor for SARS-CoV-2

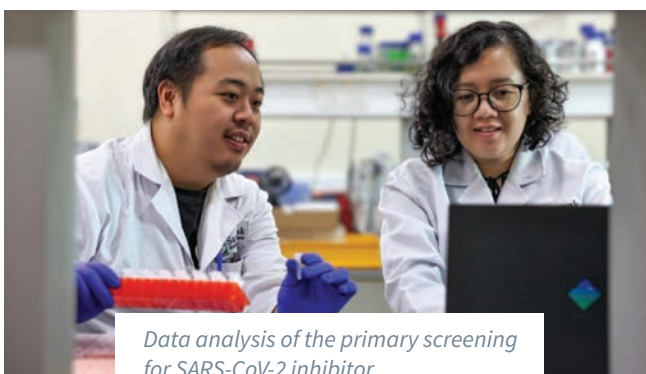
The three-year joint project with Sarawak Research and Development Council (SRDC) since December 2021 is part of future preparedness in overcoming SARS-CoV-2 and other emerging infectious diseases. Funded by SRDC, this project focused on the discovery of compounds from SBC’s Natural Product Library in search for novelty against SARS-CoV-2 infection. A total of 393 extracts from 55 plant species and 17 microbe species have been subjected to pre-fractionation for primary screening for SARS-CoV-2 inhibitor targeting 3 types of mechanism in SARS-CoV-2 replication stage in human host. Two plant species have been shortlisted based on the anti-SARS-CoV-2 activity from primary screening. Further bulk extraction and fractionation work is needed to isolate and identify the bioactive compounds. In addition, a thorough investigation on the novelty, mode of action and effectiveness of the isolated bioactive compounds is essential in determining the next step of this project.



In silico molecular docking analysis of the eIF4A:RNA:rocaglate complex modeled in a human eIF4A environment



Pre-fractionation of SBC’s Natural Product Library for primary screening



Data analysis of the primary screening for SARS-CoV-2 inhibitor

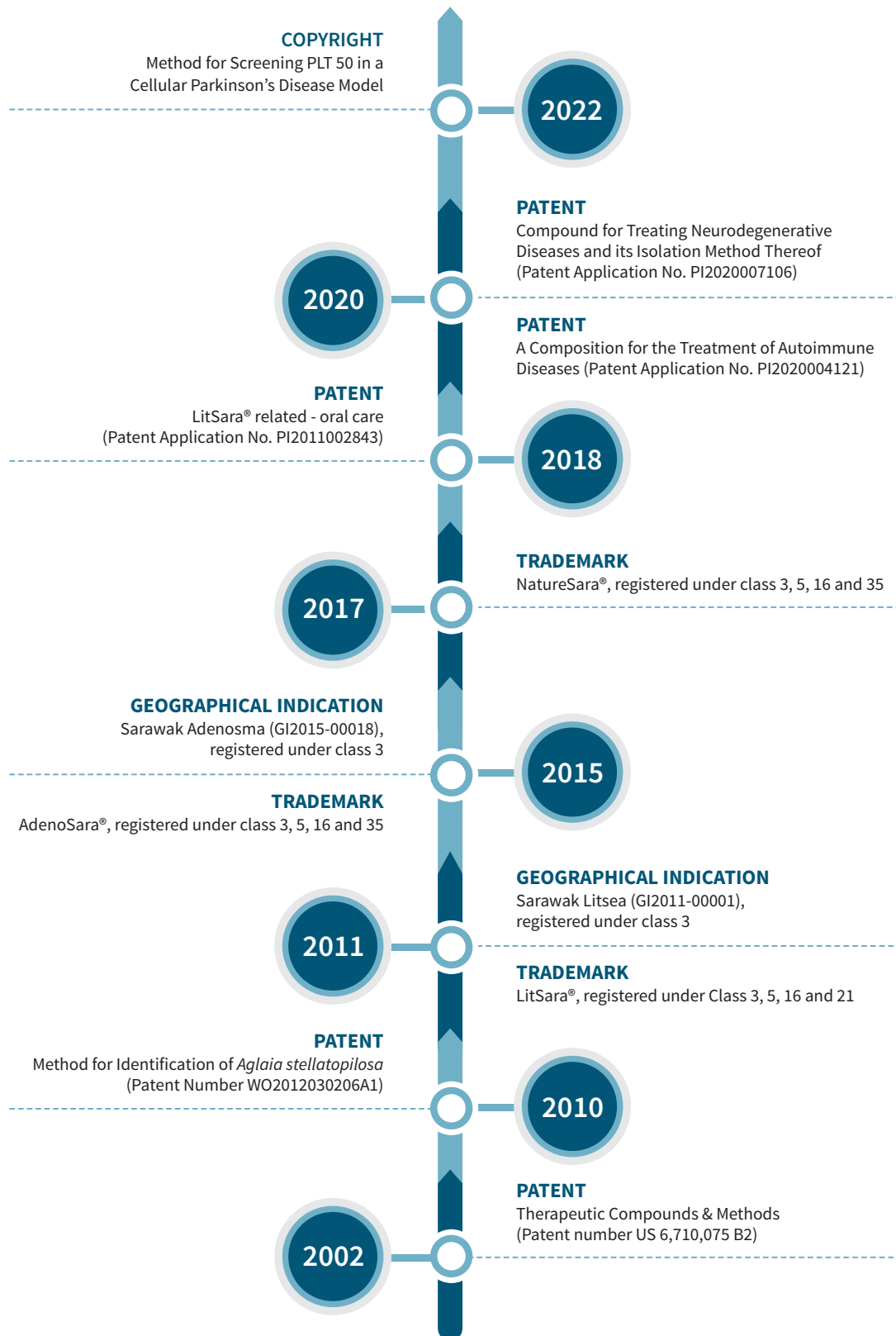


**LOCAL, REGIONAL,
GLOBAL**

LOCAL, REGIONAL, GLOBAL

INTELLECTUAL PROPERTY RIGHTS (IPRs)

In 2022, SBC continues to isolate and identify new bioactive compounds from its NPL while continuing the development of its existing IPRs portfolio. SBC'S IPRs are as follows:



Development of IPRs since 2002

LOCAL, REGIONAL, GLOBAL

INTELLECTUAL PROPERTY RIGHTS (IPRs)



1

COPYRIGHT



2

**GEOGRAPHICAL
INDICATION (GI)**



3

TRADEMARK



5

PATENT

LOCAL, REGIONAL, GLOBAL

COLLABORATION AND FUNDING

Over the years, SBC recognised the importance of collaborating with academic, industrial, and commercial organisations to advance research and development, and to commercialise research outcomes. Collaboration with academic organisations allows SBC to access the latest research knowledge, and to engage in joint research projects that can lead to new discoveries and breakthroughs. SBC also partnered with industrial and commercial organisations to develop and test new products. SBC looks forward to many more strategic collaborations that will have real-world impact from its research outcomes. In 2022, SBC signed 14 Non-Disclosure Agreements, 4 Memorandum of Undertakings, 1 Material Transfer Agreement, 2 Contract Research Agreements and 1 Service Contract Agreement. These agreements cover:

- Antiviral testing services
- Efficacy and safety studies in Imiquimod (IMQ)
- Genome sequencing
- Green technology development
- Essential oils for personal care and wellness
- Food and health-related products from Sarawak's ingredients
- Tenancy and investment in SBP

The signing of the Memorandum of Understanding with potential tenants of SBP is an important milestone for SBC as it enables SBC to engage with investors and bio-based industrial stakeholders (local and international) who have expressed a strong interest in expanding their business operations and investing in Sarawak.

SBC continues to receive research funding, such as TERAJU Dana Pembangunan Usahawan Bumiputera, United Nations Development Programme (UNDP), Mitsubishi Corporation (through its subsidiary company Diamond Gas Holdings Sdn. Bhd.), New Energy and Industrial Technology Development Organisation, Japan (NEDO) (through Chitose Laboratory Corp.) to ensure the smooth implementation of key projects.

Industrial Attachment Programme at Duopharma Biotech

Under a Memorandum of Understanding (MoU) with Duopharma Biotech Berhad (Duopharma Biotech), two (2) SBC research officers were selected to an industrial attachment programme at Duopharma Biotech, Duopharma Innovation Sdn. Bhd. (DISB)'s pharmaceutical research & development facility. The attachment dated a duration of two months, from 17th October 2022 to 16th December 2022. It was aimed at establishing a deeper technical understanding, and searching for common ground that could establish a long-term collaboration.

SBC's research officers, Siti Muhaini Binti Haris Fadzillah and Dr Kon Nyuk Fong were selected for the attachment programme with the specific areas of capacity building and training in analytical chemistry, product development and formulation. They were exposed to various activities in the Analytical and Formulation Department of DISB, by learning the workflow, industrial considerations and practices in creating a product pipeline for the company. This includes product identification, raw material sourcing, formulation trial and support, pilot batch and technology transfer plans, as well as regulatory requirements and documentation.



The industrial experience of SBC's researchers at Duopharma Biotech provides the practical aspects of product development, such as manufacturing processes, quality control and regulatory requirements.

LOCAL, REGIONAL, GLOBAL

International Meetings

Resumed Sessions of 24th Meeting of the Subsidiary Body on Scientific, Technical and Technological Advice (SBSTTA-24), Third Meeting of the Subsidiary Body on Implementation (SBI-3), and Third Meeting of the Open-Ended Working Group on the Post-2020 Global Biodiversity Framework (WG2020-3) in Geneva, Switzerland

Organiser

Convention on Biological Diversity (CBD)

Date

14th - 29th March 2022

Participants from SBC

Holed Juboi (Physical)
Dr Mohd Farith bin Kota (Virtual)

Fifth Meeting of the Open-Ended Working Group on the Post-2020 Global Biodiversity Framework (GBF) in Montreal, Canada

Organiser

Convention on Biological Diversity (CBD)

Date

3rd - 5th December 2022

Participants from SBC

Holed Juboi (Physical)
Dr Mohd Farith bin Kota (Virtual)

Fifteenth meeting of the Conference of the Parties to the United Nations Convention on Biological Diversity (CBD COP15), Tenth meeting of the Conference of the Parties serving as the meeting of the Parties to the Cartagena Protocol on Biosafety (CP-MOP10), and Fourth meeting of the Conference of the Parties serving as the meeting of the Parties to the Nagoya Protocol on Access to Genetic Resources and the Fair and Equitable Sharing of Benefits Arising from their Utilization (NP-MOP4) in Montreal, Canada

Organiser

Convention on Biological Diversity (CBD)

Date

7th - 19th December 2022

Participants from SBC

Holed Juboi (Physical)
Dr Mohd Farith bin Kota (Virtual)



WORKSHOPS AND EVENTS

WORKSHOPS AND EVENTS

WORKSHOPS

Awareness Workshops on Conservation and Dissemination of Traditional Knowledge amongst the Youth of AdenoSara® Communities

Awareness Workshops on Conservation and Dissemination of Traditional Knowledge among the Youth of AdenoSara® communities were carried out on 4th February 2022 at Rumah Simon, Lubok Antu and 12th February 2022 at Kampung Semadang, Penrissen.



Youth of Kampung Semadang presented the outcomes of their session on sharing traditional knowledge

The main objectives of this workshop are:

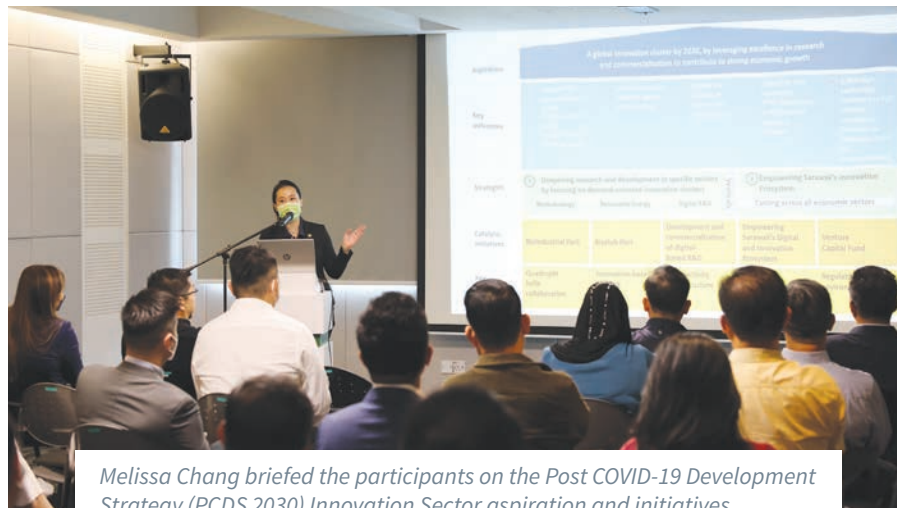
- To create awareness on conservation and dissemination of Traditional Knowledge among Youth of Kampung Semadang and Rumah Simon.
- To promote the roles of the Youth in preserving their rich Traditional Knowledge in biological resources.
- To provide a forum for discussion and exchange of ideas related to Traditional Knowledge and Biodiversity amongst the Youth.

SBC engaged a resource person, Mr Mark Liao from Sarawak Eco Warriors for the workshop to introduce various statuses of biodiversity, biodiversity loss which led to food chain imbalance in the ecosystem and highlight the roles of youths in biodiversity conservation.

WORKSHOPS AND EVENTS

WORKSHOPS

Venture Capital Workshop, 12th August 2022



Melissa Chang briefed the participants on the Post COVID-19 Development Strategy (PCDS 2030) Innovation Sector aspiration and initiatives

Sarawak-established companies, investment bodies and start-ups attended a Venture Capital Ecosystem workshop facilitated by Sarawak Biodiversity Centre (SBC) in partnership with Sarawak Digital Economy Corporation Berhad (SDEC), Ficus Capital, Malaysian Technology Development Corporation (MTDC) and Malaysian Business Angel Network (MBAN).

The workshop was kicked-off the initiative to develop the venture capital ecosystem under the Post COVID-19 Development Strategy (PCDS 2030). The workshop covered an overview and trends of the venture capital industry with focus on funding strategies and how to identify opportunities especially in the field of technology and innovation.

Ceramah Minda, Sihat Emosi Terjaga



The session on 22nd August 2022, at the IBRB Seminar Room was conducted by Ms Izyan binti Masli, Administrative Officer (Psychology) at the Ministry of Education, Innovation, and Talent Development Sarawak

The event included 30 SBC employees from various divisions. The key takeaways from the seminar were:

- How to concentrate on finding solutions rather than dwelling on problems;
- The ability to adjust to the work environment is crucial in terms of your mindset and work approach;
- How to enhance communication skills for problem-solving; avoid keeping issues to yourself and;
- How to recognise sources of stress and acquire techniques to manage it effectively.

WORKSHOPS AND EVENTS

WORKSHOPS

Workshop by Dr Jacqueline Woang Cheing Tiong on Drug Development Process and the Intellectual Property (IP) Landscape

On 23rd August 2022, Dr Jacqueline Woang Cheing Tiong conducted a sharing session with SBC research officers focusing on the topics about drug discovery pipeline and commercialisation, as Intellectual Property (IP) landscape.



Jacqueline Woang Cheing Tiong (center) pictured with SBC staff who took part in the workshop

This session was looked at the topics that are important in drug development processes spanning preclinical and clinical development. These include:

- Critical stages of drug development, including the discovering, testing, and validating of drug;
- Making transition into clinical development;
- Creating target product profile for drug marketing;
- Acknowledging the interplay between research institute and pharmaceutical industry as an important dynamic to spur the drug invention and bring the discoveries of natural products into market;
- Understanding the criteria of patenting natural product and licensing and;
- Finding the licensee and its benefits.

Dr Jacqueline has wide experiences and expertise in the management of preclinical development project of drugs, New Drug (IND) applications investigation to the United States Food and Drug Administration, as well as conducting due diligence of licencing projects and IP. The session was very insightful and important for SBC in the planning of pharmaceutical drug development and IP portfolio management.

WORKSHOPS AND EVENTS

SBC ANNUAL DINNER 2022

A Night of Gratitude

SBC hosted its Annual Dinner and Appreciation Night at the Pullman Hotel in Kuching on 2nd December 2022 to express appreciation to the staff and gratitude to Datuk Amar Jaul Samion and former Council Members. The gathering included representatives from various communities, government agencies and industries. The night was filled with festivities and recognition, including the presentation of awards such as Anugerah Perkhidmatan Cemerlang, No Sick Leave, Patent and Manuscript Authors Awards.



The recipients of the Anugerah Perkhidmatan Cemerlang (APC) were acknowledged at the dinner ceremony

The event was honoured by the presence of YB Datuk Amar Haji Mohamad Abu Bakar bin Marzuki, the Sarawak State Secretary and current Chairman of the Council, along with current Council members Tuan Haji Azmi bin Haji Bujang, Yang Arif Dato Sri Talat Mahmood bin Abdul Rashid, and YBhg Datu Dr Muhammad Abdullah bin Zaidel.

Also, in attendance were YBhg Datuk Amar Jaul Samion, the past Chairman, and YBhg Datu Kameri Haji Affandi, a former Council member. YBhg Datu Haji Ismail bin Haji Mohamad Hanis was also present at the event.

WORKSHOPS AND EVENTS

SBC TEAM BUILDING 2022

‘Dare To Connect!’, Developing Effective Team Communication, Damai Beach Resort, Kuching

A memorable team-building retreat was held from 19th to 21st December 2022 at Damai Beach Resort, Kuching. The programme kicked off with a sharing session entitled ‘Pencegahan Rasuah dalam Organisasi’ delivered by Senior Superintendent Azmi bin Yusuf from the Malaysian Anti-Corruption Commission (MACC).



The “Yellow Conqueror” emerged as the victorious team during the teambuilding event

With the theme of ‘Dare to Connect!’, the participants’ activities were customized to strengthen communication in teamwork and team bonding. They had great fun and learned from the sessions throughout the 3-day programme.

SBC Social Welfare and Sports Club put together a fun-filled Sukaneka Day as part of the team-building activity. Everybody had a blast!



Sukaneka day was held as a constituent activity during the team-building



VISITS

OFFICIAL VISITS

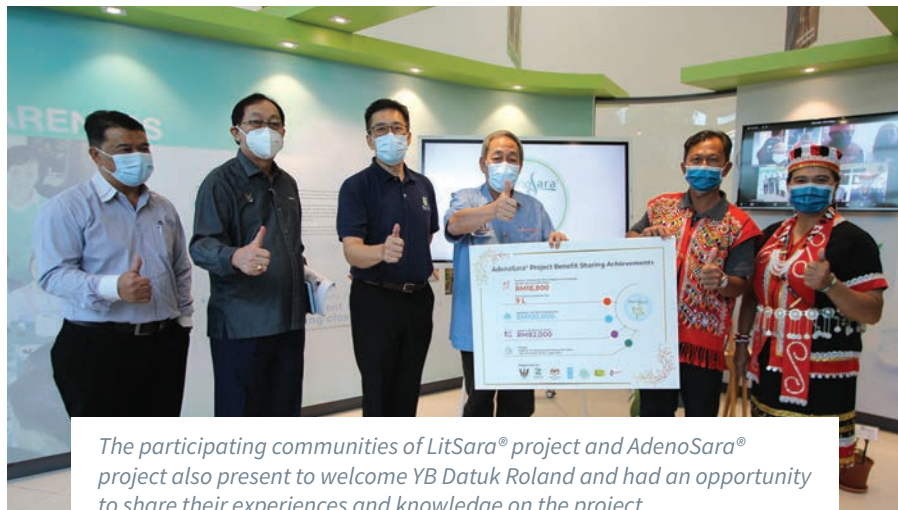


23rd February 2022 - His Excellency Dr Justin Lee, Australian High Commissioner Kuala Lumpur.

SBC were honoured to receive His Excellency Dr Justin Lee, Australian High Commissioner to Malaysia, on 23rd February 2022. His Excellency was accompanied by his wife, Ms Jeane Lee, and delegates; Ms Fiona Morris, Education Counsellor, Mr Luke McGreevy, Second Secretary, and Datuk Philip Ting.

To commemorate his visit, a *Litsea cubeba*, also known as Pakhak (Bidayuh) and Tenem (Lun Bawang & Kelabit), was planted by His Excellency.

SBC looked forward to future engagements and joint partnerships with Australian counterparts.



The participating communities of LitSara® project and AdenoSara® project also present to welcome YB Datuk Roland Sagah Wee Inn and had an opportunity to share their experiences and knowledge on the project

7th March 2022 - YB Datuk Roland Sagah Wee Inn, Minister for Education, Innovation and Talent Development (MEITD).

YB Datuk Roland Sagah Wee Inn, the Minister for Education, Innovation, and Talent Development, visited SBC as part of his familiarisation tour of agencies under this Ministry since his appointment.

During the visit, Datuk Roland Sagah and the delegation learned about SBC's roles and functions in promoting the growth of bioindustries in Sarawak. They also had the opportunity to see SBC's facilities and learn about its discoveries, including the industrial and scale-up commercialisation of bio-based products.

Members of the LitSara® and AdenoSara® project communities were also present to share their experiences and discuss the social impacts of these projects on their livelihoods, skills, and knowledge.

OFFICIAL VISITS



29th March 2023 - YBhg Dato' Low Kian Chuan, President of National Chamber of Commerce and Industry of Malaysia, YBhg Datuk Abang Haji Abdul Karim bin Tun Datuk Abang Haji Openg, President of Sarawak Business Federation and Delegates from National Chamber of Commerce and Industry Malaysia.

We extended a warm welcome to YBhg Dato' Low Kian Chuan, who served as the President of the National Chamber of Commerce and Industry of Malaysia, and YBhg Datuk Abang Haji Abdul Karim Bin Tun Datuk Abang Haji Openg, who held the position of President of the Sarawak Business Federation. They were accompanied by a delegation comprising key business leaders and investors.

To mark their visit, YBhg Dato' Low Kian Chuan planted *Eusideroxylon zwageri*, an endemic Borneo species also known as Belian or "Borneo ironwood" and YBhg Datuk Abang Haji Abdul Karim planted *Dryobalanops beccarii*, also known as the Camphor tree.



8th May 2022 - His Excellency Lee Chi Beom, Ambassador, Korean Embassy.

His Excellency was accompanied by the Minister Councillors, Mr Lee Kyoung Dock and Yoo Kwangyul, the embassy's delegates, the Korean Chamber of Commerce Malaysia Chairman, Mr Baek Seung Ryul and his colleagues, as well as other key corporate associates of the embassy. The delegates were welcomed by Datu Kameri Haji Affandi, Permanent Secretary, Ministry of Education, Innovation and Talent Development and Dr Yeo Tiong Chia, Chief Executive Officer, SBC.

The purpose of the visit is to explore new areas of cooperation, particularly in bioresearch and bioproduct development. During his speech, His Excellency emphasised that developing countries should work together with developed countries, especially in engaging with communities and sharing benefits with them.

He added that there were significant opportunities for Korean companies to collaborate with Sarawak in biodiversity-related projects within the bioindustry sector. He also mentioned that they had gained valuable knowledge about biodiversity in Sarawak during their trip to Semenggoh.

OFFICIAL VISITS



9th June 2022 - Dato' Md Silmi Abd Rahman, Chief Executive Officer, TERAJU, Kuala Lumpur.

SBC were delighted to receive delegates from TERAJU led by Dato' Hj Md Silmi Abd Rahman, Chief Executive Officer, TERAJU on 9th June 2022. He was accompanied by Mr Zarifhadi bin Bujang, Head of Programme, Ms Nadia Farzana, Senior Executive and Mr Suriyadi bin Muhammad Nasir, Executive, TERAJU Sarawak.

The purpose of the visit is to explore the way forward to expand business and collaboration opportunities in SBC's LitSara® and community projects related with bioresources.



17th June 2022 - His Excellency Dr Peter Blomeyer, German Ambassador to Malaysia.

SBC were honoured to meet His Excellency Dr Peter Blomeyer, German Ambassador to Malaysia at the Imperial Hotel, Kuching.

During the meeting, SBC expressed its strong interest in collaborating with German counterparts, particularly in the bioindustry and personal care sectors.

His Excellency conveyed his interest in revisiting Sarawak to experience the Bario highlands and to explore the impactful work undertaken by SBC in partnership with local communities.

OFFICIAL VISITS



28th June 2022 - His Excellency Takahashi Katsuhiko, Ambassador of Japan to Malaysia.

SBC had the pleasure of hosting the visit by His Excellency Takahashi Katsuhiko, Ambassador of Japan to Malaysia. He was accompanied by his wife, Madam Takahashi Mami and his officers, Ms Masubuchi Kana (Diplomatic Officer) and Mr Yagai Yuki (Second Secretary of Agriculture, Forestry, Fisheries & Environment).

In commemoration of his visit, H.E. Takahashi planted a Kemantan tree (*Mangifera torquenda*), a rare jungle mango native to Borneo. This species had been listed as “Vulnerable” under the International Union for Conservation of Nature (IUCN) Red List of Threatened Species.

The visit concluded with a productive discussion, and SBC were eager to continue nurturing a collaborative relationship with our counterparts in Japan.



21st July 2022 - His Excellency Charles Hay MVO, British High Commissioner.

The British High Commissioner to Malaysia, His Excellency Charles Hay MVO, visited SBC as part of his official trip to Sarawak.

His Excellency was joined by staff from the British High Commission in Kuala Lumpur, including Ms Khairun Nisa Zabidi, Climate Change Advisor, and Mr Nicholas Chan, Climate Diplomacy Advisor.

During the tour, the focus was on SBC’s key activities, particularly its biodiversity discoveries and their sustainability and ethical impact on communities in Sarawak.

He also had the opportunity to observe and take photographs of the tree that had been planted by King Charles III back in year 2017.

OFFICIAL VISITS



4th August 2022 - Ms Kanni Wignaraja, United Nations Assistant Secretary-General, United Nations Development Programme Assistant Administrator and Director of Bureau for Asia and the Pacific.

On 4th August 2022, Ms Kanni Wignaraja, UN Assistant Secretary-General, UNDP Assistant Administrator and Director Regional of Asia and the Pacific arrived in Kuching, Sarawak on an official visit that included a visit to the Semadang Village here in Penrissen. Semadang is one of the project sites funded by UNDP-MOF's Orang Asli/Orang Asal Micro-Grant Facility for Conservation and Livelihood (OAMGF).

The delegates visited SBC's facilities and was briefed on documentation of the plants used by the indigenous communities of Sarawak. The briefing includes current SBC's research projects that are funded by UNDP.

The visit to SBC's facilities includes a tree planting ceremony where Ms Kanni Wignaraja planted the Engkabang Jantong tree (*Shorea macrophylla*) to commemorate the visit to SBC. Whereas Mr Niloy Banerjee planted the Engkerabai plant (*Psychotria viridiflora*).



16th August 2022 - Dr Aaron Neal, Global Diplomacy, National Institute of Allergy and Infectious Disease, U.S. Embassy Kuala Lumpur.

Dr Neal visited local research institutes and agencies to gain an in-depth understanding of the research ecosystem and mechanisms in Sarawak.

During the visit to SBC, the delegates were briefed on SBC's flagship bioactive compound 'Silvestrol' and how SBC had strategised to accelerate discovery using artificial intelligence at a digital speed. This represented a new approach to bioprospecting the biodiversity of Sarawak's rainforest.

OFFICIAL VISITS



17th August 2022 - Ms Eva Oskam, Deputy Head of Mission, Netherlands Embassy Kuala Lumpur.

A delegation from the Netherlands Embassy in Kuala Lumpur, led by its Deputy Head of Mission, Ms Eva Oskam, paid a courtesy visit to SBC today. She was accompanied by officials from the embassy, including Mr Machiel Van Stralen, Deputy Head of Economic Affairs, Mr Frans Kirpestein, Economic Affairs Officer, and Ms Li Huan Hoh, Agriculture Advisor.

The discussion revolved around various perspectives and approaches to promoting sustainability-oriented industries.

We extended a warm welcome to the Dutch team to explore potential collaborations with SBC in the fields of life sciences-related projects and sustainable biomass-to-fuel conversion technologies.



2nd September 2022 - Ts Dr Nagulendran A/L Kangayatkarasu, Deputy Secretary General of Planning & STI Enculturation, Ministry of Science, Technology and Innovation (MOSTI).

Ts Dr Nagu remarked at the end of the visit, “The last time I came to SBC was in 2014 and 8 years later, it’s great to see the tremendous progress at SBC. The work at SBC is inspiring as their work transcends working with communities to cutting-edge technology. It showcases the value of our biodiversity and traditional knowledge - our heritage that we collectively need to treasure, protect, and use wisely. Well done, SBC”.

OFFICIAL VISITS



23rd September 2022 - Ministry of Energy and Natural Resources (KeTSA) YBrs Mr Abdul Wahid bin Abu Salim, Deputy Secretary General-Natural Resources.

On 23rd September 2022, the Ministry of Energy and Natural Resources (KeTSA) held a technical visit to SBC to discuss on potential strategic collaboration to establish the Malaysia Biodiversity Centre which will house the Malaysian Biodiversity Information System (MyBIS) and Natural History Museum.

MyBIS plays an important role in providing a mechanism for the efficient exchange of information on biodiversity. It aims to be a one-stop repository for biodiversity information in Malaysia.



29th September 2022 - Sabah Biodiversity Centre (SaBC) and Sabah Biodiversity Council Members.

Dr Gerald said, “SBC is way ahead in terms of the Traditional Knowledge documentation and implementation of ABS. We have learned important lessons and challenges to carry out research and development in utilising the State’s biodiversity throughout the visit”. He added that, “Sabah is well known for its richness in biodiversity and various ecosystems. Hence, SaBC is currently formulating biotechnology blueprint action which underlines its agenda and framework for the biotechnology development in utilising Sabah’s biodiversity in a sustainable manner. In addition, community involvement in the agenda is important so that they will appreciate this richness of biodiversity surrounding them”.

OFFICIAL VISITS



3rd October 2023 - Associated Chinese Chambers of Commerce and Industry of Malaysia's (ACCCIM) council members and its Primary and Agro-based Industries Committee members.

On 3rd October 2022, the Associated Chinese Chambers of Commerce, and Industry of Malaysia's (ACCCIM) council members and its Primary and Agro-based Industries Committee members were in Sarawak to learn sustainable agriculture development.

The group visited SBC to gain an understanding of sustainability-related projects implemented with communities.



7th October 2022 - Ambassador of the United States of America, His Excellency Brian McFeeters.

Ambassador of the United States of America, His Excellency Brian McFeeters paid an official visit to SBC on 7th October 2022. He was accompanied by Ms Susan Riggs, Deputy Economic Councillor, Ms Katherine LeRah Jernigan, Economic Officer, Ms Kylie Tumiatti, Economic Officer, Ms Weshia Ooi, Economic Assistant, Mr Gurdit Singh, Press Attaché and Embassy Spokesperson, Dela Amira Ahmad, Online Media Specialist and Ms Fiona Teo, Information Specialist.

He remarked that, "SBC is embarking on a green agenda with their initiative on algae development as sustainable source". He added that, "Sarawak has unique and natural ecosystems and I believed that there must be so much to see and explore Sarawak's richness of biodiversity". He shared that the US is keen to cooperate with the State on strengthening collaboration on energy and environmental conservation.

To commemorate his visit, he planted *Sindora leiocarpa* which is known locally as Tampar Antu (Iban). The local community uses the fruits to chase away evil spirits and the oil extracted from the trees is used as a traditional torch fuel.

OFFICIAL VISITS



7th October 2022 - New Zealand High Commission Kuala Lumpur Her Excellency Pam Dunn.

A delegation from the New Zealand High Commission Kuala Lumpur, led by its High Commissioner, Her Excellency Pam Dunn, paid a courtesy visit to SBC on 7th October 2022. She was accompanied by YBhg Tan Sri Datuk Amar Dr Hamid bin Bugo, the former State Secretary of Sarawak and alumnus of the University of Canterbury, New Zealand.

Her Excellency planted *Agathis borneensis* which is known locally as Bindang by the Kelabit to commemorate her visit to SBC. The local community used resin as a fire starter for cooking. The *Agathis* genus is also found in the northern regions of New Zealand.

Her Excellency shared that the visit was an eye-opener experience, and they will look for ways to collaborate with SBC and New Zealand counterparts.



10th November 2022 - Jawatankuasa Penasihat kepada Pihak Berkuasa Kompeten Kebangsaan (JPNCA) and Pihak Berkuasa Kompeten Kebangsaan (NCA) YBhg Dato' Sri Dr Hj. Abd. Rahman bin Hj. Abd. Rahim.

SBC welcomed a delegation from Jawatankuasa Penasihat kepada Pihak Berkuasa Kompeten Kebangsaan (JPCNA) led by its Chairman, YBhg Dato' Sri Dr Hj. Abd. Rahman bin Hj. Abd. Rahim.

The role of JPNCA and NCA is as coordinator of the implementation of Act 795 Access to Biological Resources and Benefit Sharing at the federal level and as National Focal Point to various conventions involving access to biological resources and benefit sharing. JPNCA was appointed by the Secretary General of KeTSA to advise the NCA on scientific, legal, technical, ethical, and other disciplinary matters.

Mr Fathely bin Bily, Head of Section, Intelligence, Investigation & Prosecution and Mr Willy Chin Siaw Min, Head of Section, TPA Protection of Sarawak Forestry Corporation, presented a briefing on Wildlife Protection Ordinance 1998 and National Parks & Nature Reserves Ordinance to the delegates.

Dato' Sri Abd Rahman shared, "We have learned a lot from the visit today especially how ABS could bring benefits to the indigenous communities and SBC's effort in creating awareness on biopiracy".



REGULATORY FUNCTION

REGULATORY FUNCTION

WEBINAR BY RESEARCH PERMIT HOLDERS ON BIOPROSPECTING SARAWAK'S BIOLOGICAL RESOURCES

On 29th December 2022, SBC hosted a webinar on Bioprospecting Sarawak's Biological Resources featuring two researchers who presented their experiences and findings.

The objectives of this webinar were to highlight the research work of researchers who had applied and received a Research Permit from the Sarawak Biodiversity Council under the Sarawak Biodiversity Regulations 2016 and to share their insights, their experiences, and outcomes of their research on biological resources with the research community. In addition, the webinar can enhance knowledge and encourage collaboration and bring about improvements to the field. Furthermore, it served as a platform to appreciate and recognise the efforts of scientists and researchers who are compliant to the Sarawak Biodiversity Centre Ordinance.

SBC Webinar on R&D Bioprospecting on Sarawak Biological Resources

Speaker 1:
Mr. Koh Chen Chung
Lecturer,
Centre for Research of Innovation and Sustainable
Development (CRISD),
University Technology Sarawak (UTS)

**Isolation of prebiotics from
Artocarpus interger's seed**

Speaker 2:
Prof. Dr. Ahmad Hata Bin Rasit
Professor (Medical Lecturer),
Faculty of Medical and Health Sciences,
Universiti Malaysia Sarawak (UNIMAS)

**Frog Skin and Its Potential in
Wound Healing**

DATE & TIME:
29 December, Thursday
2.00pm

REGISTRATION
<https://bit.ly/3YKleED>
Seats are limited

QR Code

LIVE
or log on to facebook.com/sarawak.biodiversitycentre to watch it live.

For more information and inquiries on the talk,
please contact Jadya Nicholas Ningkan
(017-805 8133) or Constance Vanessa Victor
(016-972 3658).

www.sbc.org.my

Mr Koh Chen Chung, representing University Technology Sarawak (UTS), shared his research titled 'Isolation of prebiotics from *Artocarpus interger's* seed.' Additionally, Professor Dr Ahmad Hata bin Rasit, from Universiti Malaysia Sarawak (UNIMAS), featured his discoveries on 'Frog Skin and Its Potential in Wound Healing' which was presented by Professor Dr Ramlah binti Zainudin. The webinar was attended by 46 participants via Zoom and Facebook live.



STAFF ACHIEVEMENTS

STAFF ACHIEVEMENTS

Anugerah Perkhidmatan Cemerlang (APC) 2022

Ali anak Raos
Driver

Asma' Saiyidatina Aishah binti Abdul Rahman
Assistant Research Officer (Microbiology)

Chew Leh King
Administrative Assistant (Accounts)

Clifford anak Junaidi Kutoi
Research Officer (Algae)

Dayang Syahreenny binti Abang Mustafa
Research Officer (Algae)

Freddie anak Ambrose Ambol
Research Assistant (Algae)

Ling How Lie
Research Officer (Molecular Biology)

Melissa Chang May Fung
Research Officer (Analytical Chemistry)

Mitchel Constance anak George
Research Officer (Sample Extraction)

Sofina Gari
Assistant Research Officer (Microbiology)

Sijil Perkhidmatan Cemerlang 2022 (Laporan Penilaian Prestasi Tahunan 85% and above)

Aiger James Di-O
Administrative Assistant (Maintenance)

Ali anak Raos
Driver

Ann Anni Basik
Research Officer, Head of R&D Operation (Microbe)

Anna Ng Mei Na
Administrative Assistant (Human Resource)

Annie Anthoney Empira
Cleaner

Arlene Alicia anak Toaiang
Research Officer (Ethno Biological Research)

Arzie binti Ramli
Assistant Research Officer (Microbiology)

Asma' Saiyidatina Aishah binti Abdul Rahman
Assistant Research Officer (Microbiology)

Barbara anak Ngikoh @ Nyikoh
Research Officer (Molecular Biology)

Bernardine Ida anak Joseph Jinam
Administrative Officer

Bernard anak Jerome
Gardener

Chai Li Chin
Research Officer (Bioinformatics)

Chew Leh King
Administrative Assistant (Accounts)

Clare Heinzie anak Juhin
Administrative Officer

Clifford Anak Junaidi Kutoi
Research Officer (Algae)

Dick Brandon anak Devi
Research Assistant (Algae)

Dayang Syahreenny Binti Abang Mustafa
Research Officer (Algae)

Elizabeth Alice anak Gabriel Nasib
Administrative Assistant (Purchasing)

Ellen Tan Chia Min
Research Assistant (Microbiology)

Fazariah binti Kipali
Research Assistant (Ethno Biological Research)

Frankie anak Kumbak
Research Assistant (Molecular Biology)

Freddie anak Ambrose Ambol
Research Assistant (Algae)

Harny anak Chapi
Research Officer (Algae)

Hafizah binti Booty
Research Officer (Algae)

Holed anak Juboi
Research Officer (Microbiology)

Hugh anak Doyos
Driver

STAFF ACHIEVEMENTS

Sijil Perkhidmatan Cemerlang 2022 (Laporan Penilaian Prestasi Tahunan 85% and above)

Gilbert Lau Sei Kung

Head of Section (Bioinformatics)

Jorim anak Ujang

Research Officer (Molecular Biology)

Julian Voong Cheng Liang

Research Officer (Head of Collaboration)

Keekoti Sue anak Betin

Research Officer (Algae)

Lee Jong Jen

Research Officer (Algae)

Ling How Lie

Research Officer (Molecular Biology)

Ling Sheau Jing

Research Officer (Analytical Chemistry)

Lucy Noraini Mitis

Administrative Assistant (Accounts)

Madeleine anak Bujang

Assistant Research Officer (Plant Tissue Culture)

Margarita Naming

Research Officer (Head of R&D)

Mariani binti Omarzuki @ Marzuki

Research Officer, (Plant Tissue Culture)

Masmah binti Jaya

Cleaner

Michele Mejin

Head of Section (Analytical Chemistry)

Mitchel Constance anak George

Research Officer (Sample Extraction)

Melissa Chang May Fung

Research Officer (Analytical Chemistry)

Melvin George Rut

Administrative Assistant

Mohamad Nasar bin Pawi

Research Assistant (Plant Preparation)

Mohd Fadeli Haironi Bin Jemat

Research Officer (Algae)

Mohd Farith bin Kota

Research Officer (Microbiology)

Mounsey Muskie anak Moding

Research Assistant (Microbiology)

Noor Mehrunnika Dawood Sha Sulaiman Kamal Batcha

Assistant Research Officer (Sample Extraction)

Noor Pahtiwati binti Bohari

Head of Operation (Plant)

Nuraqilah binti Othman

Research Officer (Analytical Chemistry)

Nur Khairun Nisa' binti Mohd Sallehudin

Research Officer (Algae)

Noreha binti Mahidi

Research Officer (Microbiology)

Norlia binti Gani

Administrative Assistant

Ng Lee Tze

Research Officer (Algae)

Ng Yik Han

Research Officer (Microbiology)

Rigep anak Anyain

Research Assistant (Plant Tissue Culture)

Romney anak Dawur

Security Guard

Rosy anak Tian Lin

Administrative Assistant

Selwynn anak Jaai Edward

Assistant Administrative Officer

Siti Aisyah binti Mohd Zaman

Research Officer (Product Development)

Siti Muhaini binti Haris Fadzillah

Research Officer (Analytical Chemistry)

Spencer Russel anak Samuel

Security Guard

Suria binti Johari

Research Officer (Plant Tissue Culture)

Sylvia Jennifer anak James

Pembantu Setiausaha Pejabat

Sofina Gari

Assistant Research Officer (Microbiology)

Stanley Ho Han Kiat

Research Officer (Algae)

Tu Chu Lee

Research Officer (Ethno Biological Research)

Van McQueen anak Thomas

Assistant Research Officer (Product Development)

Zurien Amiera binti Irwan

Assistant Research Officer (Analytical Chemistry)

STAFF ACHIEVEMENTS

Certificate of Achievement for Without Sick Leave

Seventeen (17) consecutive years (2006-2022)

Rosy anak Tian Lin
Administrative Assistant

Fifteen (15) consecutive years (2008-2022)

Sabda bin Safiee
Research Officer (Algae)

Thirteen (13) consecutive years (2010-2022)

Margarita Naming
Research Officer (Head of R&D)

Ten (10) consecutive years (2013-2022)

Barbara anak Ngikoh @ Nyikoh
Research Officer (Molecular Biology)

Seven (7) consecutive years (2016-2022)

Hafizah binti Booty
Research Officer (Algae)

Lee Jong Jen
Research Officer (Algae)

Five (5) consecutive years (2018-2022)

Melissa Chang May Fung
Research Officer (Analytical Chemistry)

Mohd Farith bin Kota
Research Officer (Microbiology)

Four (4) consecutive years (2019-2022)

Holed anak Juboi
Research Officer (Microbiology)

Mohd Fadel Haironi bin Jemat
Research Officer (Algae)

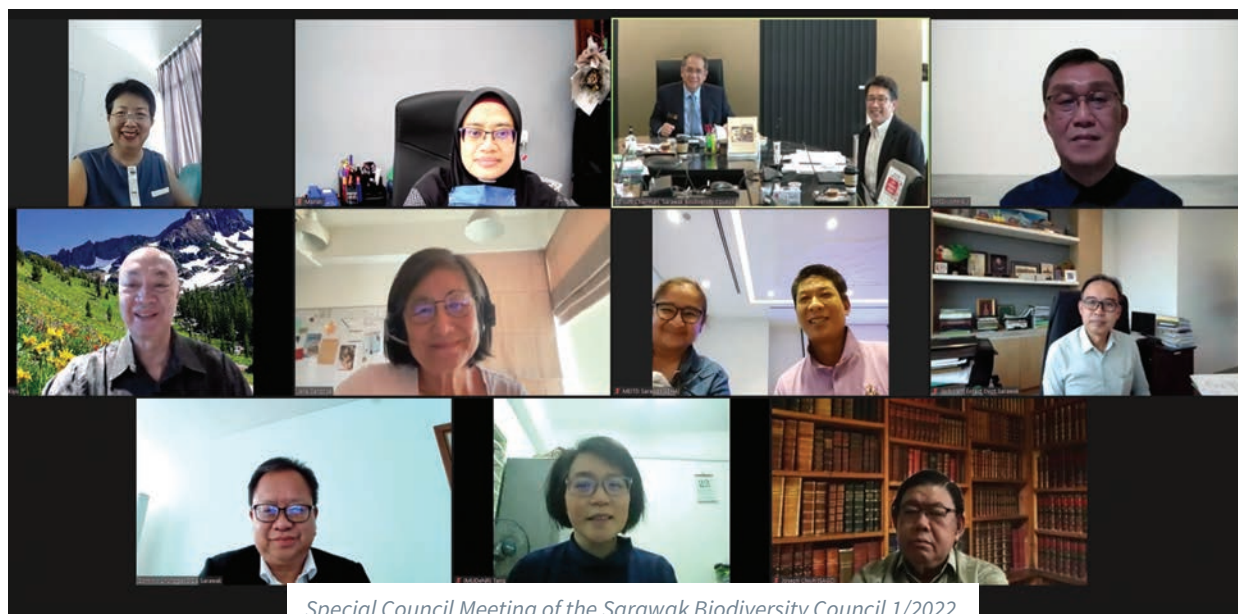
Ng Yik Han
Research Officer (Microbiology)

Selwynn Jaai Edward
Assistant Administrative Officer

Romney anak Dawur
Security Guard

RECORDS OF SARAWAK BIODIVERSITY COUNCIL AND COMMITTEES UNDER THE COUNCIL MEETING IN THE YEAR 2022

No	Type of Meeting	Frequency
1	Sarawak Biodiversity Council	2
2	SBC Establishment Committee	2
3	SBC Finance and Investment Committee	3
4	SBC Audit Committee Meeting	3
5	Technical Committee on Access and Benefit Sharing	-
6	SBC Disciplinary Committee - Management & Professional Group	-
7	SBC Disciplinary Committee - Support Group	-
8	SBC Disciplinary Appeal Committee - Management & Professional Group	-
9	SBC Disciplinary Appeal Committee - Support Group	-





SOCIAL WELFARE AND SPORT CLUB

SOCIAL WELFARE AND SPORT CLUB

Activity

28th May 2022 - Badminton Tournament at Sentosa Sport Centre.

On 28th May 2022, SBC Welfare and Sport Club organised the Badminton Tournament at Sentosa Sport Centre. The event turned out to be incredibly enjoyable and filled with fun. Congratulations to the winning team, Shuttle Ace, and a big well done to Spartan, Sabasooohha, and Red Red Cili Padi for their outstanding performances!



The team engaged in a guided hike lasting approximately 3 hours, providing them with the chance to discover techniques for identifying and observing nocturnal animals

1st September 2022 - Biodiversity Experiential Learning - Frog sighting activities at Kubah National Park.

A team of 10 internship students accompanied by two officers from Sarawak Biodiversity Centre (SBC) were on a mission to be a naturalist for one evening!

The group went to Kubah National Park and along the way and at a small pond, lived several species of amphibians that were amazing. Not only did the interns attempt to identify species of frogs and wildlife that dwelled in the forest reserves, but they also learned how to spot these critters in the dark of the night with a yellow beam flashlight.

“The frog safari was the best thing that I could have asked for during my internship period. The experience was on a whole new level. I believe that was the most interesting and effective way to learn something new.” said Hon Kai Ting, an intern from the Plant Tissue Culture laboratory.

This frog sighting activity was organised by SBC as a learning activity for the interns, with the objective of promoting appreciation of Sarawak’s rich biodiversity of frogs.



Megophrys nasuta can be found on the forest floors of Southeast Asia, from the foothills of the Himalayas to the Indo-Australian Archipelago (Obst et. al, 1984)

SOCIAL WELFARE AND SPORT CLUB

Activity

3rd September 2022 - Futsal Tournament, Sentosa Sport Centre, Kuching.

To foster sportsmanship and promote good health among the staff, an internal futsal tournament was organised, attracting enthusiastic participation from the staff.

The active participation of the staff in the tournament showcased their enthusiasm and willingness to partake in healthy activities. Congratulations to the winning team, Sabasooohha.

Swimming Lesson

In the year 2022, a group of 24 staff members took part in swimming lessons. These lessons were meaningful for employees who frequently participate in field trips, particularly those that involve water transportation. The training programme lasted for two months and was conducted at the Aquatic Centre located on Jalan Green.



A breathtaking view could be seen from the peak of Mount Krian in Bau

Hiking

Promoting a healthy lifestyle and environmental awareness, SBC organised hiking trips, incorporating plogging activities throughout the year. Staff explored scenic spots like Sikog Waterfall, Silabur Cave, and Mount Krian. Scheduled on weekends, these excursions offered a perfect work-life balance for staff to enjoy the outdoors while making a positive impact.

24th September 2022 - Hari Sukaneka Ministry of Education, Innovation and Talent Development (MEITD) Bersama Agensi

The Ministry of Education, Innovation and Talent Development (MEITD) extended an invitation to SBC to take part in the “Hari Sukaneka MEITD Bersama Agensi” event on Saturday, 24th September 2022. The concept for this Sukaneka event originated from the Permanent Secretary of MEITD, with the objectives of fostering camaraderie with other agencies within MEITD and promoting team spirit among these agencies. A total of 30 SBC staff participated in this Sukaneka event, which was held at the Centre of Technical Excellence Sarawak (CENTEXS) in Santubong.

The Ministry of Education, Innovation, and Talent Development (MEITD) Sarawak invited SBC to participate in the ‘Hari Sukaneka MEITD Bersama Agensi’ event on 24th September 2022. The main goal of this initiative was to strengthen bonds and foster camaraderie between various agencies under the Ministry’s purview. With enthusiasm, 30 SBC staff joined the sukaneka, and they thoroughly enjoyed the event, promoting team spirit throughout the day.



ANNIVERSARY

SARAWAK BIODIVERSITY CENTRE

**CELEBRATING DISCOVERY
AND INNOVATION IN BIODIVERSITY**

Our commitment to biodiversity research has driven groundbreaking discoveries and paved the way for innovative breakthroughs in biodiversity for the benefit of Sarawak. Additionally, we have embraced the wisdom passed down through generations, acknowledging the value of traditional knowledge.

In the year 2023, we anticipate celebrating this momentous occasion with esteemed stakeholders, researchers, communities, and passionate individuals who share our collective vision for a better tomorrow.

FINANCIAL STATEMENTS

FOR THE FINANCIAL YEAR ENDED 31 DECEMBER 2022

91	Council Members
92	Officer and Professional Advisors
93	Penyata Pengerusi dan Timbalan Pengerusi
94	Pengakuan oleh Pegawai Utama yang Bertanggungjawab ke atas Pengurusan Kewangan
95	Sijil Ketua Audit Negara
99	Statement of Financial Position
100	Statement of Comprehensive Income
101	Statement of Changes in Equity
102	Statement of Cash Flows
103	Notes to the Financial Statements

COUNCIL MEMBERS

Chairman

State Secretary Sarawak

YB Datuk Amar Haji Mohamad Abu Bakar Bin Marzuki (*appointed 1st July 2022*)

YB Datuk Amar Jaul Samion (*ceased 30th June 2022*)

Deputy Chairman

Permanent Secretary, Ministry of Education, Innovation and Talent Development, Sarawak

Tuan Haji Azmi Bin Haji Bujang (*appointed 1st November 2022*)

YBhg Datu Kameri Haji Affandi (*ceased 18th October 2022*)

Secretary

Chief Executive Officer, Sarawak Biodiversity Centre

Dr Yeo Tiong Chia

Council Members

State Attorney General, Sarawak

Yang Arif Dato Sri Talat Mahmood Bin Abdul Rashid

State Financial Secretary, Sarawak

YBhg Dato Sri Dr Haji Wan Lizozman Bin Wan Omar

Permanent Secretary, Ministry of Natural Resources and Urban Development, Sarawak

YBhg Datu Sr Zaidi Bin Haji Mahdi

Deputy State Secretary (Economic Planning & Development), Sarawak

YBhg Datu Dr Muhammad Abdullah Bin Haji Zaidel (*appointed on 1st July 2022*)

YBhg Dato Sri Haji Mohamad Abu Bakar Bin Marzuki (*ceased on 30th June 2022*)

Director, Department of Forest, Sarawak

YBhg Datu Hamden Bin Mohammad

Director, Department of Agriculture, Sarawak

Mr Dominic Chungat

Controller of Environmental Quality, Natural Resources and Environment Board Sarawak

Mdm Peggy Anak Ronin

YBhg Prof. Datu Dr Andrew Kiyu Dawie

Dr Mary Jane Cardosa

Mdm Anne Kung Soo Ching

OFFICER AND PROFESSIONAL ADVISORS

Chief Executive Officer

Dr Yeo Tiong Chia

Registered office

Lot 724, Block 3, Sentah-Segu Land District
KM20, Jalan Borneo Heights, Semengoh
Locked Bag No. 3032
93990 Kuching, Sarawak

Auditor

Ketua Audit Negara Malaysia

Bankers

Malayan Banking Berhad
Level 1, Wisma Satok, Jalan Satok
93400 Kuching, Sarawak

RHB Bank Berhad
12 & 13, Eastern Commercial Centre
17th Mile, Kuching-Serian Road
94200 Kuching, Sarawak

Public Bank Berhad
384-388, Sentosa Central
Batu 7, Jalan Penrissen
93250 Kuching, Sarawak

Development Bank of Sarawak
Level 2, Menara SEDC, Lot 2878
The Isthmus, Off Jalan Bako
93050 Kuching, Sarawak

PENYATA Pengerusi dan Timbalan Pengerusi

Kami, **YB DATUK AMAR HAJI MOHAMAD ABU BAKAR BIN MARZUKI** dan **TUAN HAJI AZMI BIN HAJI BUJANG** yang merupakan Pengerusi dan Timbalan Pengerusi **MAJLIS KEPELBAGAIAN BIOLOGI SARAWAK** dengan ini menyatakan bahawa, pada pendapat Ahli - Ahli Majlis, Penyata Kewangan yang mengandungi Penyata Kedudukan Kewangan, Penyata Pendapatan Komprehensif, Penyata Perubahan Ekuiti dan Penyata Aliran Tunai yang berikut ini berserta dengan nota-nota kepada Penyata Kewangan di dalamnya, adalah disediakan untuk menunjukkan pandangan yang benar dan saksama berkenaan kedudukan **MAJLIS KEPELBAGAIAN BIOLOGI SARAWAK** pada **31 DISEMBER 2022** dan hasil kendaliannya serta perubahan kedudukan kewangannya bagi tahun yang berakhir pada tarikh tersebut.

Bagi pihak Majlis,

Bagi pihak Majlis,



.....
**YB Datuk Amar Haji Mohamad Abu Bakar
Bin Marzuki**



.....
Tuan Haji Azmi Bin Haji Bujang

Tarikh: **27 APR 2023**

Kuching

Tarikh: **27 APR 2023**

Kuching

PENGAKUAN OLEH PEGAWAI UTAMA YANG BERTANGGUNGJAWAB KE ATAS PENGURUSAN KEWANGAN MAJLIS KEPELBAGAIAN BIOLOGI SARAWAK

Saya, **DR YEO TIONG CHIA**, pegawai utama yang bertanggungjawab ke atas pengurusan kewangan dan rekod-rekod perakaunan **MAJLIS KEPELBAGAIAN BIOLOGI SARAWAK**, dengan ikhlasnya mengakui bahawa Penyata Kedudukan Kewangan, Penyata Pendapatan Komprehensif, Penyata Perubahan Ekuiti dan Penyata Aliran Tunai **dalam kedudukan kewangan** yang berikut ini berserta dengan nota-nota kepada Penyata Kewangan di dalamnya, pada pendapat saya, adalah betul dan saya membuat ikrar ini dengan sebenarnya mempercayai bahawa ianya adalah benar dan atas kehendak-kehendak Akta Akuan Berkanun, 1960.

Sebenar dan sesungguhnya)
diakui oleh penama di atas)
di KUCHING, SARAWAK)
pada haribulan.....)

12 7 APR 2023


.....

DR YEO TIONG CHIA
(K.P. NO.: 660420-13-5379)

Di hadapan saya

SALEHAH BINTI HID
2nd Class Magistrate
Kuching District Office.
State Of Sarawak


.....
MAGISTRATE



SIJIL KETUA AUDIT NEGARA



SIJIL KETUA AUDIT NEGARA MENGENAI PENYATA KEWANGAN MAJLIS KEPELBAGAIAN BIOLOGI SARAWAK BAGI TAHUN BERAKHIR 31 DISEMBER 2022

Sijil Mengenai Pengauditan Penyata Kewangan

Pendapat

Saya telah memberikan kuasa kepada firma audit swasta di bawah subseksyen 7(3) Akta Audit 1957 [Akta 62] untuk mengaudit Penyata Kewangan Majlis Kepelebagaian Biologi Sarawak. Penyata kewangan tersebut merangkumi Penyata Kedudukan Kewangan pada 31 Disember 2022 Majlis Kepelebagaian Biologi Sarawak dan Penyata Pendapatan Komprehensif, Penyata Perubahan Ekuiti serta Penyata Aliran Tunai bagi tahun berakhir pada tarikh tersebut dan nota kepada penyata kewangan termasuklah ringkasan polisi perakaunan yang signifikan seperti yang dinyatakan pada muka surat 9 hingga 27.

Pada pendapat saya, penyata kewangan ini memberikan gambaran yang benar dan saksama mengenai kedudukan kewangan Majlis Kepelebagaian Biologi Sarawak pada 31 Disember 2022 dan prestasi kewangan serta aliran tunai bagi tahun berakhir pada tarikh tersebut selaras dengan Piawaian Pelaporan Entiti Persendirian Malaysia (MPERS) dan keperluan The Statutory Bodies (Financial and Accounting Procedure) Ordinance, 1995 serta The Sarawak Biodiversity Centre Ordinance, 1997.

Asas Kepada Pendapat

Pengauditan telah dilaksanakan berdasarkan Akta Audit 1957 dan International Standards of Supreme Audit Institutions. Tanggungjawab saya dihuraikan selanjutnya di perenggan Tanggungjawab Juruaudit Terhadap Pengauditan Penyata Kewangan dalam sijil ini. Saya percaya bahawa bukti audit yang diperoleh adalah mencukupi dan bersesuaian untuk dijadikan asas kepada pendapat saya.

Kebebasan dan Tanggungjawab Etika Lain

Saya adalah bebas daripada Majlis Kepelebagaian Biologi Sarawak dan telah memenuhi tanggungjawab etika lain berdasarkan International Standards of Supreme Audit Institutions.

SIJIL KETUA AUDIT NEGARA

Maklumat Lain Selain Daripada Penyata Kewangan dan Sijil Juruaudit Mengenainya

Lembaga Pengarah, Majlis Kepelbagaian Biologi Sarawak bertanggungjawab terhadap maklumat lain dalam Laporan Tahunan. Pendapat saya terhadap Penyata Kewangan Majlis Kepelbagaian Biologi Sarawak tidak meliputi maklumat lain selain daripada penyata kewangan dan Sijil Juruaudit mengenainya dan saya tidak menyatakan sebarang bentuk kesimpulan jaminan mengenainya.

Tanggungjawab Lembaga Pengarah Terhadap Penyata Kewangan

Lembaga Pengarah bertanggungjawab terhadap penyediaan Penyata Kewangan Majlis Kepelbagaian Biologi Sarawak yang memberi gambaran benar dan saksama selaras dengan Piawaian Pelaporan Entiti Persendirian Malaysia (MPERS) dan keperluan The Statutory Bodies (Financial and Accounting Procedure) Ordinance, 1995 serta The Sarawak Biodiversity Centre Ordinance, 1997. Lembaga Pengarah juga bertanggungjawab terhadap penetapan kawalan dalaman yang perlu bagi membolehkan penyediaan Penyata Kewangan Majlis Kepelbagaian Biologi Sarawak yang bebas daripada salah nyata yang ketara, sama ada disebabkan fraud atau kesilapan.

Semasa penyediaan Penyata Kewangan Majlis Kepelbagaian Biologi Sarawak, Lembaga Pengarah bertanggungjawab untuk menilai keupayaan Majlis Kepelbagaian Biologi Sarawak untuk beroperasi sebagai satu usaha berterusan, mendedahkannya jika berkaitan serta menggunakannya sebagai asas perakaunan.

Tanggungjawab Juruaudit Terhadap Pengauditan Penyata Kewangan

Objektif saya adalah untuk memperoleh keyakinan yang munasabah sama ada Penyata Kewangan Majlis Kepelbagaian Biologi Sarawak secara keseluruhannya adalah bebas daripada salah nyata yang ketara, sama ada disebabkan fraud atau kesilapan, dan mengeluarkan Sijil Juruaudit yang merangkumi pendapat saya. Jaminan yang munasabah adalah satu tahap jaminan yang tinggi, tetapi bukan satu jaminan bahawa audit yang dijalankan mengikut International Standards of Supreme Audit Institutions akan sentiasa mengesan salah nyata yang ketara apabila ia wujud. Salah nyata boleh wujud daripada fraud atau kesilapan dan dianggap ketara sama ada secara individu atau agregat sekiranya boleh dijangkakan dengan munasabah untuk mempengaruhi keputusan ekonomi yang dibuat oleh pengguna berdasarkan penyata kewangan ini.

Sebagai sebahagian daripada pengauditan mengikut International Standards of Supreme Audit Institutions, saya menggunakan pertimbangan profesional dan mengekalkan keraguan profesional sepanjang pengauditan. Saya juga:

SIJIL KETUA AUDIT NEGARA

- a. mengenal pasti dan menilai risiko salah nyata ketara dalam Penyata Kewangan Majlis Keperbagaian Biologi Sarawak, sama ada disebabkan fraud atau kesilapan, merangka dan melaksanakan prosedur audit yang responsif terhadap risiko berkenaan serta mendapatkan bukti audit yang mencukupi dan bersesuaian untuk memberikan asas kepada pendapat saya. Risiko untuk tidak mengesan salah nyata ketara akibat daripada fraud adalah lebih tinggi daripada kesilapan kerana fraud mungkin melibatkan pakatan, pemalsuan, ketinggalan yang disengajakan, representasi yang salah, atau mengatasi kawalan dalaman;
- b. memahami kawalan dalaman yang relevan untuk merangka prosedur audit yang bersesuaian tetapi bukan untuk menyatakan pendapat mengenai keberkesanan kawalan dalaman Majlis Keperbagaian Biologi Sarawak;
- c. menilai kesesuaian dasar perakaunan yang diguna pakai, kemunasabahan anggaran perakaunan dan pendedahan yang berkaitan oleh Lembaga Pengarah;
- d. membuat kesimpulan terhadap kesesuaian penggunaan asas perakaunan untuk usaha berterusan oleh Lembaga Pengarah dan berdasarkan bukti audit yang diperoleh, sama ada wujudnya ketidakpastian ketara yang berkaitan dengan peristiwa atau keadaan yang mungkin menimbulkan keraguan yang signifikan terhadap keupayaan Majlis Keperbagaian Biologi Sarawak sebagai satu usaha berterusan. Jika saya membuat kesimpulan bahawa ketidakpastian ketara wujud, saya perlu melaporkan dalam Sijil Juruaudit terhadap pendedahan yang berkaitan dalam Penyata Kewangan Majlis Keperbagaian Biologi Sarawak atau, jika pendedahan tersebut tidak mencukupi, pendapat saya akan diubah. Kesimpulan saya dibuat berdasarkan bukti audit yang diperoleh sehingga tarikh Sijil Juruaudit. Bagaimanapun, peristiwa atau keadaan pada masa hadapan berkemungkinan menyebabkan Majlis Keperbagaian Biologi Sarawak tidak lagi berupaya meneruskan operasi secara usaha berterusan; dan
- e. menilai persembahan secara keseluruhan, struktur dan kandungan Penyata Kewangan Majlis Keperbagaian Biologi Sarawak, termasuk pendedahannya, dan sama ada penyata kewangan tersebut telah melaporkan asas-asas urus niaga dan peristiwa-peristiwa yang memberikan gambaran saksama.

Lembaga Pengarah telah dimaklumkan, antaranya mengenai skop dan tempoh pengauditan yang dirancang serta penemuan audit yang signifikan termasuk kelemahan kawalan dalaman yang dikenal pasti semasa pengauditan.

SIJIL KETUA AUDIT NEGARA

Hal-hal Lain

Sijil ini dibuat untuk Lembaga Pengarah, Majlis Kepelbagaian Biologi Sarawak berdasarkan keperluan The Statutory Bodies (Financial and Accounting Procedure) Ordinance, 1995 serta The Sarawak Biodiversity Centre Ordinance, 1997 dan bukan untuk tujuan lain. Saya tidak bertanggungjawab terhadap pihak lain bagi kandungan sijil ini.



(DATUK WAN SURAYA BINTI WAN MOHD RADZI)
KETUA AUDIT NEGARA
MALAYSIA



PUTRAJAYA

30 OGOS 2023

STATEMENT OF FINANCIAL POSITION

AS AT 31 DECEMBER 2022

	Note	2022 RM	2021 RM
NON-CURRENT ASSET			
Property, plant and equipment	4	26,197,229	26,592,478
CURRENT ASSETS			
Trade and other receivables	5	501,222	763,448
Tax refundable	11	116,748	106,794
Fixed deposits	6	22,005,000	16,990,220
Cash and cash equivalents	7	532,477	4,181,214
Total current assets		23,155,447	22,041,676
TOTAL ASSETS		49,352,676	48,634,154
EQUITY			
Retained surplus		34,078,240	36,880,423
NON-CURRENT LIABILITY			
Provision for retirement benefits	8	168,784	108,833
CURRENT LIABILITIES			
Development grants	9	14,447,843	11,158,362
Other payables and accruals	10	644,170	478,461
Provision for retirement benefits	8	13,639	8,075
Total current liabilities		15,105,652	11,644,898
TOTAL LIABILITIES		15,274,436	11,753,731
TOTAL EQUITY AND LIABILITIES		49,352,676	48,634,154

The accompanying notes on pages 103 to 115 form an integral part of the financial statements.

STATEMENT OF COMPREHENSIVE INCOME

FOR THE FINANCIAL YEAR ENDED 31 DECEMBER 2022

	Note	2022 RM	2021 RM
Revenue	12	644,250	554,153
Government grants	13	12,720,867	14,850,032
		<u>13,365,117</u>	<u>15,404,185</u>
Staff costs	14	(9,123,767)	(8,822,179)
Depreciation of property, plant and equipment	4	(4,211,673)	(4,019,031)
Other operating expenses	15	(2,729,814)	(2,472,201)
(Deficit)/Surplus before taxation		<u>(2,700,137)</u>	<u>90,774</u>
Taxation	11	(102,046)	(105,308)
Deficit for the financial year		<u>(2,802,183)</u>	<u>(14,534)</u>

The accompanying notes on pages 103 to 115 form an integral part of the financial statements.

STATEMENT OF CHANGES IN EQUITY

FOR THE FINANCIAL YEAR ENDED 31 DECEMBER 2022

	Retained Surplus RM
Balance as at 1 January 2021	36,894,957
Deficit for the financial year	(14,534)
Balance as at 31 December 2021 and 1 January 2022	<hr/> 36,880,423
Deficit for the financial year	(2,802,183)
Balance as at 31 December 2022	<hr/> 34,078,240 <hr/>

The accompanying notes on pages 103 to 115 form an integral part of the financial statements.

STATEMENT OF CASH FLOWS

FOR THE FINANCIAL YEAR ENDED 31 DECEMBER 2022

	Note	2022 RM	2021 RM
CASH FLOW FROM OPERATING ACTIVITIES			
(Deficit)/Surplus before taxation		(2,700,137)	90,774
Adjustments for the items not involving the movements of cash and cash equivalents			
Amortisation of development grant	13	(3,720,867)	(4,300,032)
Development funds	9	-	-
Depreciation of property, plant and equipment	4	4,211,673	4,019,031
Fixed deposit interest income	12	(425,192)	(438,785)
Provision for retirement benefits	8	74,386	20,195
Loss on disposal of property, plant and equipment		1,224	-
Operating deficit before changes in working capital		(2,558,913)	(608,817)
(Decrease)/Increase in trade and other receivables		125,096	(282,211)
Increase/(Decrease) in other payables and accruals		165,709	(651,742)
Cash used in operations		(2,268,108)	(1,542,770)
Retirement benefits paid	8	(8,871)	(18,478)
Income tax paid	11	(112,000)	(180,000)
Net cash used in operating activities		(2,388,979)	(1,741,248)
CASH FLOW FROM INVESTING ACTIVITIES			
Purchase of property, plant and equipment		(3,818,828)	(4,371,693)
Proceed from disposals of property, plant and equipment		1,180	-
Development grant received	9	15,635,535	9,723,401
Research and development expenditure	9	(8,498,955)	(5,629,253)
Fixed deposit interest income received		436,090	605,035
(Placement)/Withdrawal of fixed deposits with maturity terms more than 3 months		(5,014,780)	4,026,471
Net cash (used in)/generated from investing activities		(1,259,758)	4,353,961
Net (decrease)/increase in cash and cash equivalents		(3,648,737)	2,612,713
Cash and cash equivalents at beginning of the year		4,181,214	1,568,501
Cash and cash equivalents at end of the year	7	532,477	4,181,214

The accompanying notes on pages 103 to 115 form an integral part of the financial statements.

NOTES TO THE FINANCIAL STATEMENTS

FOR THE FINANCIAL YEAR ENDED 31 DECEMBER 2022

1. GENERAL INFORMATION

The registered address and principal place of business for Sarawak Biodiversity Council (Council) is Lot 724 Block 3, Sentah-Segu Land District, KM20 Jalan Borneo Heights, Semengoh, Locked Bag No. 3032, 93990 Kuching, Sarawak.

The Council which is a body incorporated in accordance with the Sarawak Biodiversity Centre Ordinance, 1997 (Chapter 24, Laws of Sarawak), is a Sarawak State Government - owned statutory body and its vision is “Enriching lives with breakthrough innovations in Biodiversity”.

Since then, two amendments; i.e. Sarawak Biodiversity Centre (Amendment) Ordinance, 2003 [Chapter A106, Laws of Sarawak] and the Sarawak Biodiversity Centre (Amendment) Ordinance, 2014 [Chapter A163, Laws of Sarawak] came into force on 1 April 2004 and 1 June 2015 respectively. SBC is now entrusted with the following statutory functions:

- conduct bioprospecting/R&D Programme on the biodiversity of the State and maintain a library of extract for R&D;
- implement the Traditional Knowledge Documentation Programme among the traditional communities in the State;
- provide facilities for research and development;
- establish linkages and partnerships to undertake research and development;
- to promote education and knowledge of biodiversity of the State;
- establish and maintain a database on information related to the biological resources of the State;
- implement Prior Informed Consent (PIC) to ensure benefit sharing with the ethnic communities of Sarawak when traditional knowledge associated with a biological resource is accessed and benefits are shared through mutually agreed terms.

The functional currency of the Council is Ringgit Malaysia (RM). The financial statements of the Council were authorised for issue by the Council Members via Council Circular Resolutoon 15/2023 approved on 27th April 2023.

2. SIGNIFICANT ACCOUNTING POLICIES

The financial statements of the Council have been prepared in accordance with the Malaysian Private Entities Reporting Standard (“MPERS”), Statutory Bodies (Financial and Accounting Procedure) Ordinance, 1995 and Treasury Instructions.

(a) Basis of preparation

The financial statements are prepared using cost bases and fair value bases.

NOTES TO THE FINANCIAL STATEMENTS

FOR THE FINANCIAL YEAR ENDED 31 DECEMBER 2022

2. SIGNIFICANT ACCOUNTING POLICIES (continued)

(b) Property, plant and equipment

The cost of an item of property, plant and equipment is recognised as an asset when it is probable that future economic benefits associated with the item will flow to the Council and the cost of the item can be measured reliably. After recognition as an asset, all items of property, plant and equipment are measured at cost less any accumulated depreciation and any accumulated impairment losses. Depreciation is provided on a straight-line method so as to write off the depreciable amount of the following assets over their estimated useful lives. The rates of depreciation are as follows: -

• Leasehold land	1.67% p.a.
• Buildings	5% p.a.
• Office equipment	15-20% p.a.
• Furniture, fixtures and fittings	10% p.a.
• Computers and accessories	15-20% p.a.
• Office renovations	10-15% p.a.
• Motor vehicles	20% p.a.
• Specialised equipment (equipment)	15% p.a.
• Specialised equipment (computer)	20% p.a.
• Specialised equipment (software)	20% p.a.
• Temporary office	10% p.a.
• Nursery sheds	10% p.a.
• Lab specialised equipment	15% p.a.
• Lab furniture and fittings	10-15% p.a.

Depreciation of an asset begins when it is ready for its intended use. Fully depreciated assets are retained in the financial statements until they are no longer in use. Leasehold land is amortised over leasehold term of 60 years.

The gain or loss arising from the disposal or retirement of an item of property, plant and equipment is determined as the difference between the sale proceeds and the carrying amount of the asset and is recognised in profit or loss.

If there is an indication that there has been a significant change since the last annual reporting date in the pattern by which the Council expects to consume an asset future economic benefits, the Council would review its present depreciation method and if current expectations' differ, the Council would amend the residual value, depreciation method or useful life to reflect the new pattern.

(c) Operating grant

Grant received from the State Government for the operation or maintenance of the Council's activities that do not impose specified future performance criteria is credited to statement of comprehensive income.

NOTES TO THE FINANCIAL STATEMENTS

FOR THE FINANCIAL YEAR ENDED 31 DECEMBER 2022

2. SIGNIFICANT ACCOUNTING POLICIES (continued)

(d) Development grant

The Council receives development grants from the State Government in order to finance activities and projects related to biodiversity research and development protection. This is in line with the functions and powers of the Council, as provided by the Sarawak Biodiversity Centre Ordinance, 1997. The grants received that impose specified future performance conditions are credited to the development grants under liability and offset against future costs when incurred.

(e) Impairment of property, plant and equipment

Property, plant and equipment are reviewed for impairment whenever events or changes in circumstances indicate that the carrying amount of the asset may not be recoverable. Whenever the carrying amount of the asset may not be recoverable amount, an impairment loss is recognised in profit and loss for items property, plant and equipment carried at cost. The recoverable amount is the higher of an asset's net selling price and value in use. The net selling price is the amount obtainable from the sale of an asset in an arm's length transaction.

Value in use is the present value of estimated future cash flows expected to arise from the continuing use of an asset and from its disposal at the end of its useful life. Recoverable amounts are estimated for individual assets or, if it is not possible, for the cash-generating unit.

Reversal of an impairment loss recognised in prior years is recorded when there is an indication that the impairment loss recognised for an asset no longer exists or has decreased. The reversal is recorded in profit or loss.

(f) Employee benefits

i) Short-term benefits

Wages, salaries, bonuses and social security contributions are recognised as expenses in the year in which employees of the Council render the associated services. Short-term accumulating compensated absences, such as paid annual leave are recognised when services rendered by employees that increase their entitlement to future compensated absences; and short-term non-accumulating compensated absences, such as sick leave are recognised when the absences occur.

(ii) Long-term benefits

Long-term benefits recognised as accruals is for the *Gantian Cuti Rehat* (GCR) that is based on the accumulated leave for an employee until it reaches a maximum of 150 days before compulsory retirement. The present value of the future estimated basic salary at a discount factor of 2.75% (2021:3.3%) has been applied for the calculation of the liability.

NOTES TO THE FINANCIAL STATEMENTS

FOR THE FINANCIAL YEAR ENDED 31 DECEMBER 2022

2. SIGNIFICANT ACCOUNTING POLICIES (continued)

(f) Employee benefits

(iii) Defined contribution plan

The Council's contribution to defined contribution plans is charged to the statement of comprehensive income in the period in which it relates. Once the contributions have been paid, the Council has no further payment obligations.

As required by law, the Council makes contributions to the Employee Provident Fund (EPF). Such contributions are recognised as an expense in the statement of comprehensive income as incurred.

(g) Financial assets and liabilities

Financial assets and liabilities are recognised in the statement of financial position when the Council has become a party to the contractual provisions of the instrument. The particular recognition methods are dissolved below:-

(i) Other receivables

Other receivables are carried at amortised cost. Bad debts are written off when identified. An estimate is made for doubtful debts based on review of all outstanding accounts as at the reporting date.

(ii) Cash and cash equivalents

Cash and cash equivalents in the statement of cash flows comprise cash and bank balances which are readily convertible to cash and which are subjected to an insignificant risk of changes in value.

(iii) Fixed Deposits

Fixed deposits comprise long-term bank deposits with original maturity periods of more than three (3) months.

(iv) Other payables and accruals

Other payables are stated at amortised cost, which is fair value of the consideration paid in the future for goods and services received.

NOTES TO THE FINANCIAL STATEMENTS

FOR THE FINANCIAL YEAR ENDED 31 DECEMBER 2022

2. SIGNIFICANT ACCOUNTING POLICIES (continued)

(h) Revenue recognition

- Revenue from sales of products is measured at the fair value of the consideration received or receivable, net of any trade discounts and indirect taxes applicable to the revenue. Revenue is recognised in profit or loss when it is probable that the economic benefits associated with transaction will flow to the Council and the amount of the revenue can be measured reliably.
- Fixed deposit interest income is recognised as it accrues using the effective interest method.
- Other income is recognised at the point of receipt or sales by the Council.

(i) Research and development

Research and development expenditure comprise deferred direct project costs and related overheads incurred for projects ranging from 2 to 30 years. These research and development expenditures are recognised as project costs when the research and development are completed and offset against development grant received.

(j) Provisions

Provisions are recognised when there is a present obligation, legal or constructive, as a result of a past event, when it is probable that an outflow of resources embodying economic benefits will be required to settle the obligation and a reliable estimate can be made of the amount of the obligation. Provisions are reviewed at each reporting date and adjusted to reflect the current best estimate.

(k) Taxation

Income tax on the profit or loss for the financial year comprises current tax. Current tax is the expected amount of income tax payable or receivable in respect of the taxable profit or loss for the financial year and is measured using the tax rates that have been enacted or substantially enacted at the reporting date and any tax adjustment payable in respect of previous financial years.

3. CRITICAL ACCOUNTING JUDGEMENTS AND KEY SOURCES OF ESTIMATION UNCERTAINTY

(a) Critical judgments in applying the accounting policies

There is no critical judgment made by the management in the process of applying the accounting policies that have significant effect on the amounts recognised in the financial statements.

NOTES TO THE FINANCIAL STATEMENTS

FOR THE FINANCIAL YEAR ENDED 31 DECEMBER 2022

3. CRITICAL ACCOUNTING JUDGEMENTS AND KEY SOURCES OF ESTIMATION UNCERTAINTY (continued)

(b) Key sources of estimation uncertainty

The key assumptions concerning the future, and other key sources of estimation uncertainty at the reporting date, that have a significant risk of causing a material adjustment to the carrying amounts of assets and liabilities within the next financial year are as follows:

(i) Change of estimated useful lives for property, plant and equipment

The Council reviews the estimated useful lives of property, plant and equipment annually.

(ii) Impairment loss of property, plant and equipment

The Council's property, plant and equipment comprise a significant portion of the Council's total assets.

Changes in technology or industry conditions may cause the estimated period of use or the value of these assets to change. Long-lived assets are reviewed for impairment at least annually or whenever events or changes in circumstances have indicated that their carrying amounts may not be recoverable. If any such indication exists, the recoverable amount is estimated.

The recoverable amount of an asset is the higher of an asset's net selling price and value in use. The net selling price is the amount obtainable from the sale of an asset in an arm's length transaction. Value in use is the present value of estimated future cash flows using a pretax discount rate that reflects current market assessments of the time value of money and the risks specific to the asset, which requires significant judgment relating to level of revenue and amount of operating costs. The Council uses all readily available information in determining an amount that is a reasonable approximation of the value in use, including estimates based on reasonable and supportable assumptions and projections of revenue and operating costs. Changes in these estimates could have a significant impact on the carrying value of the assets and could result in additional impairment charge or reversal of impairment in future periods.

(iii) Provision for retirement benefits

Long-term benefits recognised as accruals is for the *Gantian Cuti Rehat* (GCR) that is based on the accumulated leave for an employee until it reaches a maximum of 150 days before compulsory retirement. The present value of the future estimated basic salary at a discount factor of 2.75% (2021: 3.3%) has been applied for the calculation of the provision.

NOTES TO THE FINANCIAL STATEMENTS

FOR THE FINANCIAL YEAR ENDED 31 DECEMBER 2022

4. PROPERTY, PLANT AND EQUIPMENT

2022

	Buildings RM	Leasehold land RM	Office equipment RM	Furniture, fixtures and fittings RM	Computers and accessories RM	Office renovations RM	Motor vehicles RM	Specialised equipment RM	Temporary office RM	Nursery sheds RM	Lab specialised equipment RM	Lab furniture and fittings RM	Total RM
Cost													
At 1 January 2022	17,288,691	6,616,000	1,082,982	1,204,281	2,475,252	584,209	1,358,198	106,530	372,473	94,068	27,214,957	648,240	59,045,881
Additions	-	-	89,746	-	95,911	-	-	-	-	-	3,633,171	-	3,818,828
Disposals	(5,200)	-	(27,890)	-	(25,422)	-	-	(6,322)	-	-	(18,449)	-	(83,283)
At 31 December 2022	17,283,491	6,616,000	1,144,838	1,204,281	2,545,741	584,209	1,358,198	100,208	372,473	94,068	30,829,679	648,240	62,781,426
Accumulated Depreciation													
At 1 January 2022	8,046,145	138,109	874,252	782,386	2,069,653	555,381	1,101,115	106,494	372,472	94,063	17,704,621	608,712	32,453,403
Chargers	864,175	110,487	72,270	80,832	227,938	8,099	119,424	-	-	-	2,714,618	13,830	4,211,673
Disposals	(2,860)	-	(27,840)	-	(25,412)	-	-	(6,321)	-	-	(18,446)	-	(80,879)
At 31 December 2022	8,907,460	248,596	918,682	863,218	2,272,179	563,480	1,220,539	100,173	372,472	94,063	20,400,793	622,542	36,584,197
Carrying amounts													
	8,376,031	6,367,404	226,156	341,063	273,562	20,729	137,659	35	1	5	10,428,886	25,698	26,197,229

NOTES TO THE FINANCIAL STATEMENTS

FOR THE FINANCIAL YEAR ENDED 31 DECEMBER 2022

4. PROPERTY, PLANT AND EQUIPMENT (continued)

2021

	Buildings RM	Leasehold land RM	Furniture, fixtures and fittings				Computers and accessories RM	Office renovations RM	Motor vehicles RM	Specialised equipment RM	Temporary office RM	Nursery sheds RM	Lab specialised equipment RM	Lab furniture and fittings RM	Total RM
			RM	RM	RM	RM									
Cost															
At 1 January 2021	17,288,691	6,616,000	982,858	1,046,393	2,382,691	584,209	1,358,198	106,530	372,473	94,068	23,193,837	648,240	54,674,188		
Additions	-	-	100,124	157,888	92,561	-	-	-	-	-	4,021,120	-	4,371,693		
At 31 December 2021	17,288,691	6,616,000	1,082,982	1,204,281	2,475,252	584,209	1,358,198	106,530	372,473	94,068	27,214,957	648,240	59,045,881		
Accumulated Depreciation															
At 1 January 2021	7,181,710	27,622	806,265	712,366	1,811,572	547,282	949,045	106,494	372,472	94,063	15,231,531	593,950	28,434,372		
Chargers	864,435	110,487	67,987	70,020	258,081	8,099	152,070	-	-	-	2,473,090	14,762	4,019,031		
At 31 December 2021	8,046,145	138,109	874,252	782,386	2,069,653	555,381	1,101,115	106,494	372,472	94,063	17,704,621	608,712	32,453,403		
Carrying amounts															
	9,242,546	6,477,891	208,730	421,895	405,599	28,828	257,083	36	1	5	9,510,336	39,528	26,592,478		

NOTES TO THE FINANCIAL STATEMENTS

FOR THE FINANCIAL YEAR ENDED 31 DECEMBER 2022

5. Trade and other receivables

	2022 RM	2021 RM
Trade receivables	11,425	16,806
Other receivables	37,616	175,722
Prepayments	219,109	326,950
Interest receivables	233,072	243,970
	<u>501,222</u>	<u>763,448</u>

Other receivables includes reimbursements receivable for research and development expenditure of RM27,090 (2021: RM153,322) (Note 9).

6. Fixed deposits

	2022 RM	2021 RM
Fixed deposits with licensed banks	<u>22,005,000</u>	<u>16,990,220</u>

Fixed deposits with licensed banks of the Council at the end of the reporting period having maturity periods ranging from six (6) to twelve (12) months and bore effective interest rates ranging from 2.10% to 4.10% (2021: 2.10%-2.20%) per annum.

7. Cash and cash equivalents

	2022 RM	2021 RM
Cash and bank balances	<u>532,477</u>	<u>4,181,214</u>

NOTES TO THE FINANCIAL STATEMENTS

FOR THE FINANCIAL YEAR ENDED 31 DECEMBER 2022

8. Provision for retirement benefits

	2022 RM	2021 RM
Balance as at 1 January	116,908	115,191
Payment for the year	(8,871)	(18,478)
Provision for retirement benefits during the year	74,386	20,195
Balance as at 31 December	182,423	116,908
Current provision for retirement benefits	13,639	8,075
Non-current provision for retirement benefits	168,784	108,833
	182,423	116,908

9. Development grants

	2022 RM	2021 RM
Balance as at 1 January	11,005,040	11,210,924
Received during the year	15,635,535	9,723,401
Amortised during the year	(3,720,867)	(4,300,032)
Offset against research and development expenses	(8,498,955)	(5,629,253)
Balance as at 31 December	14,420,753	11,005,040
Add: Reclassification as other receivables (Note 5)	27,090	153,322
	14,447,843	11,158,362

Development grants comprise grants received from the Sarawak Government and collaborators for the purpose of research and development. At 31 December 2022, reimbursements receivable for research and development expenditure of RM27,090 (2021: RM153,322) was reclassified as other receivables.

10. Other payables and accruals

	2022 RM	2021 RM
Other payables	464,004	406,258
Accruals	180,166	72,203
	644,170	478,461

NOTES TO THE FINANCIAL STATEMENTS

FOR THE FINANCIAL YEAR ENDED 31 DECEMBER 2022

11. Provision for taxation/Taxation

In exercising the powers under Section 127(3)(b) of Income Tax Act 1967, YB Menteri Kewangan Malaysia has made a new order: **Income Tax (Exemption) (No.22) Order 2006 [P.U. (A) 207 @ 01 June 2006]**. This order is applicable to Sarawak Biodiversity Council where the Minister has exempted:

- (a) any person from the payment of income tax in respect of income relating to the allocations given by the Federal or State Government in the form of grant or subsidy; and
- (b) a statutory body from the payment of income tax in respect of income derived from:
 - (i) the income received in respect of an amount chargeable and collectible from any person in accordance with the provisions of the Act regulating the statutory authority; or
 - (ii) any donations or contribution received.

This Order shall have effect from the Year of Assessment 2006. Income Tax (Exemption) (No.17) Order 1995 [P.U. (A) 213/1995] and Income Tax (Exemption) (No.4) Order 2003 [P.U. (A) 33/2003] are revoked from the Year of Assessment 2006.

The provision for taxation is made based on the fixed deposit interest income only.

	2022 RM	2021 RM
Balance at 1 January	(106,794)	(32,102)
Current year provision	102,046	105,308
Tax paid	(112,000)	(180,000)
Balance at 31 December	<u>(116,748)</u>	<u>(106,794)</u>
Tax refundable	<u>116,748</u>	<u>106,794</u>

12. Revenue

	2022 RM	2021 RM
Fixed deposit interest income	425,192	438,785
Tender document fees	14,200	11,600
Sales of products	101,505	55,403
Other income	103,353	48,365
	<u>644,250</u>	<u>554,153</u>

13. Government grants

	2022 RM	2021 RM
Operating grant	9,000,000	10,550,000
Amortisation of development grant	3,720,867	4,300,032
	<u>12,720,867</u>	<u>14,850,032</u>

The operating grant received from State Government is mainly for operating expenditures. The development grant is amortised for the cost of property, plant and equipment capitalised for the year.

NOTES TO THE FINANCIAL STATEMENTS

FOR THE FINANCIAL YEAR ENDED 31 DECEMBER 2022

14. Staff costs

	2022 RM	2021 RM
Personnel emolument	7,409,303	7,353,332
Provision for retirement benefits	74,386	20,195
Staff incentives	153,667	116,049
EPF	930,197	969,122
SOCSSO	86,127	88,145
Overtime	77,862	78,567
Transport and travelling	197,695	55,330
Medical expenses	103,627	100,798
Staff uniform	90,903	40,641
	<u>9,123,767</u>	<u>8,822,179</u>

15. Other operating expenses

	2022 RM	2021 RM
Advertisement	20,182	12,474
Audit fees	9,646	9,646
Bank charges	1,498	1,546
Computer and accessories	200,223	146,677
Consultancy fees	84,323	67,325
Conference and seminar fees	87,987	25,210
Council Members' allowance and sitting fees	106,571	111,600
Electricity charges	311,256	342,789
Entertainment	96,417	24,023
Fuel and lubricant	21,346	16,805
Human resource development expenses	104,686	2,800
Lab consumables	105,286	98,896
Lab maintenance	305,677	511,116
Loss on disposal of property, plant & equipment	1,224	-
Indigenous Knowledge Benefit Sharing	6,717	3,964
Insurance	49,940	65,281
Motor vehicles road tax	2,032	1,839
Newspapers and magazines	20,604	23,216
Office expenses	272,453	248,869
Office maintenance	622,173	646,349
Postage and courier	2,314	17,360
Printing and stationery	24,284	23,093
Repairs and maintenance - motor vehicles	49,019	12,452
Telecommunication and internet charges	31,066	31,279
Venue and Event Cost	170,422	-
Water charges	22,468	27,592
	<u>2,729,814</u>	<u>2,472,201</u>

NOTES TO THE FINANCIAL STATEMENTS

FOR THE FINANCIAL YEAR ENDED 31 DECEMBER 2022

16. Capital commitments

Approved capital expenditure and contracted for in the financial statements as at 31 December 2022 is RM1.21 million (2021: RM2.12 million).

17. Financial instruments

17.1 Categories of financial instruments

	2022 RM	2021 RM
<u>Financial assets measured at amortised cost</u>		
Trade and other receivables (excluded prepayments)	282,113	436,498
Cash and cash equivalents	532,477	4,181,214
Fixed deposits	22,005,000	16,990,220
	<hr/>	<hr/>
<u>Financial liabilities measured at amortised cost</u>		
Other payables	464,004	406,258
	<hr/>	<hr/>

17.2 Net gains arising from financial instruments

	2022 RM	2021 RM
Net gains on financial assets measured at amortised costs:		
- Fixed deposit interest income	425,192	438,785
	<hr/>	<hr/>

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