SARAWAK BIODIVERSITY CENTRE
ANNUAL REPORT

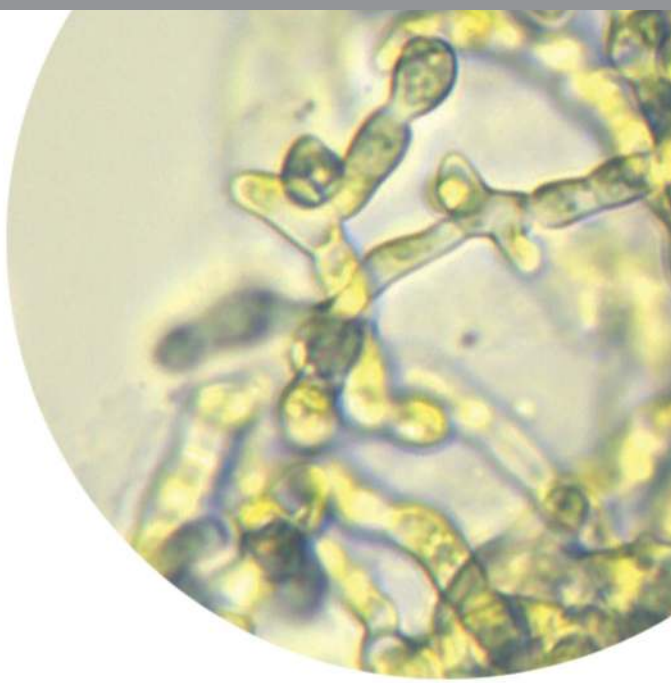
TRADITIONAL KNOWLEDGE DOCUMENTATION
ACCESS AND BENEFIT SHARING
BIODIVERSITY GARDEN
R&D BIODISCOVERY
AWARENESS & APPRECIATION
BIOINDUSTRIAL PARK & SBC BIOPROCESS COMMERCIAL CENTRE

Sarawak
Biodiversity Centre

2018

Cover Photo : Green colonies
Chlamydomonas was found in freshwater body. This green algal has been the excellent model strain of study in mechanism involving photosynthesis, cell motility and response to light, which paved way to elucidate algal lipid metabolism. Among the species, *Chlamydomonas reinhardtii* has been highlighted as the potential algal in biofuel production with significant lipid accumulation under nutrient deprivation.

TABLE OF CONTENT



Vision

Enriching Lives with Breakthrough Innovation in Biodiversity

Mission

To Decode Biodiversity for the Benefit of Mankind

Tagline

Biodiversity for a Better Tomorrow

Foreword from the Chairman of the Sarawak Biodiversity Council 2018

Year 2018, the Sarawak Biodiversity Centre (SBC) marks a milestone by itself where it charts its new direction to transform and commercialize its research finding with established collaborations with other interested parties to maximise its effort in adding value to biodiversity and enhancing excellence in the field of research and development.

Over the past two decades, SBC has developed a unique value proposition consisting of parallel and complementary efforts to systematically bioprospect Sarawak's diverse aquatic and terrestrial environments to build and make accessible the most complete collection of local plant, and microbial specimens in Borneo, and to compile a deep repository of the traditional knowledge (TK) accrued over centuries by local indigenous communities to help unlock potential applications of this knowledge in areas ranging from healthcare and agriculture to food and cosmetics.

This combined approach has resulted in the establishment of numerous research and development collaborations with partners worldwide that have yielded many new insights and products. The impact of these activities has also been invaluable as efforts to ensure fair and equitable benefit-sharing with indigenous communities and the continuous training of a highly skilled workforce represent key contributions to Sarawak's bioscience and digital technologies–based development programmes.

Moving forward, SBC is poised to further solidify its position as a key player in efforts to decode Sarawak's biodiversity and translate the knowledge into innovative and sustainable solutions for the region and the world. Key goals are to expand its research into commercialization stage, increase its global partnering footprint, attract investment into a soon to be set up bioindustrial park and strengthen its role as an engine of development for Sarawak.

As the Centre enters its third decade of operation, the breadth and depth of its R&D Biodiscovery Programme continues to make SBC a regional reference for efforts to decode biodiversity and translate the new knowledge into innovative solutions.

With this, I would like to congratulate SBC's team for its continuous commitment towards research for a better tomorrow. I also look forward to more exciting events and higher levels of achievement for the coming year.

On behalf of the Council, I would like to express my gratitude and thanks to the Sarawak Government for being able to foresee the future of biodiversity research and for having the vision to drive the development of the Centre into one of the renowned biodiversity based centre in Sarawak.

YBhg Tan Sri Datuk Amar Wilson Baya Dandot
Chairman, Sarawak Biodiversity Council

Sarawak Biodiversity Council

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Chairman, Sarawak Biodiversity Council

YBhg Datu Haji Sudarsono Osman
Permanent Secretary, Ministry of Education,
Science and Technological Research (MESTR)
Deputy Chairman, Sarawak Biodiversity Council

Dr Yeo Tiong Chia
Chief Executive Officer
Sarawak Biodiversity Centre
Secretary, Sarawak Biodiversity Council

Yang Arif Datuk Talat Mahmood Bin Abdul Rashid
State Attorney General
Council Member, Sarawak Biodiversity Council

YBhg Dato Sri Ahmad Tarmizi Bin Haji Sulaiman
State Financial Secretary
Council Member, Sarawak Biodiversity Council

YBhg Datu Dr Haji Wan Lizozman Bin Wan Omar
Permanent Secretary
Ministry of Urban Development and Natural Resources (MUDeNR)
Council Member, Sarawak Biodiversity Council

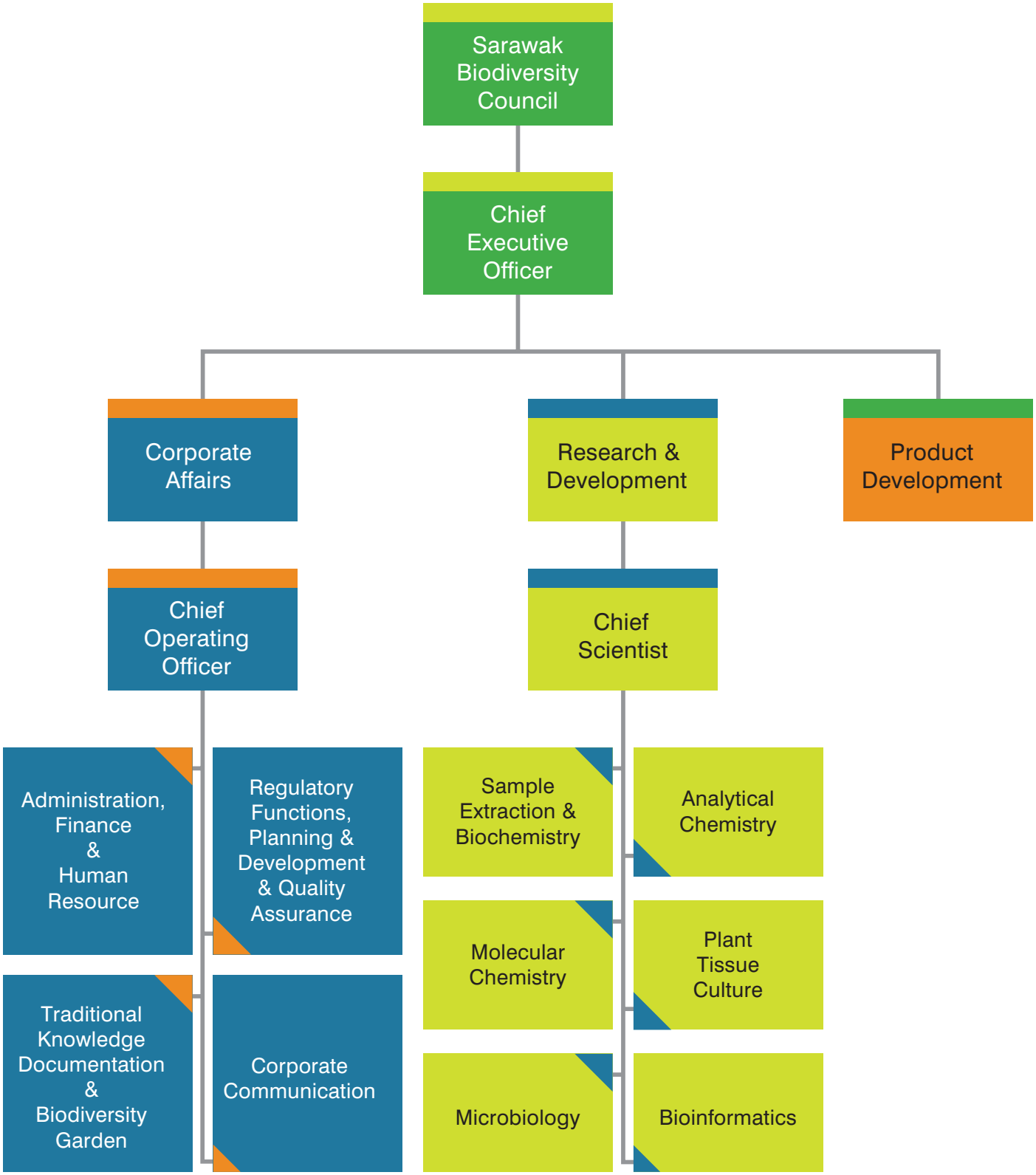
YBhg Datu Haji Mohamad Abu Bakar Bin Marzuki
Deputy State Secretary [Socio-Economic Transformation]
Council Member, Sarawak Biodiversity Council

Mr Hamden Bin Haji Mohammad
Director of Forests / Controller of Wildlife
Council Member, Sarawak Biodiversity Council

Dr Alvin Chai Lian Kuet
Acting Director of Agriculture
Council Member, Sarawak Biodiversity Council

Mr Peter Sawal
Controller, Natural Resources & Environment Board (NREB)
Council Member, Sarawak Biodiversity Council

Organisation Structure



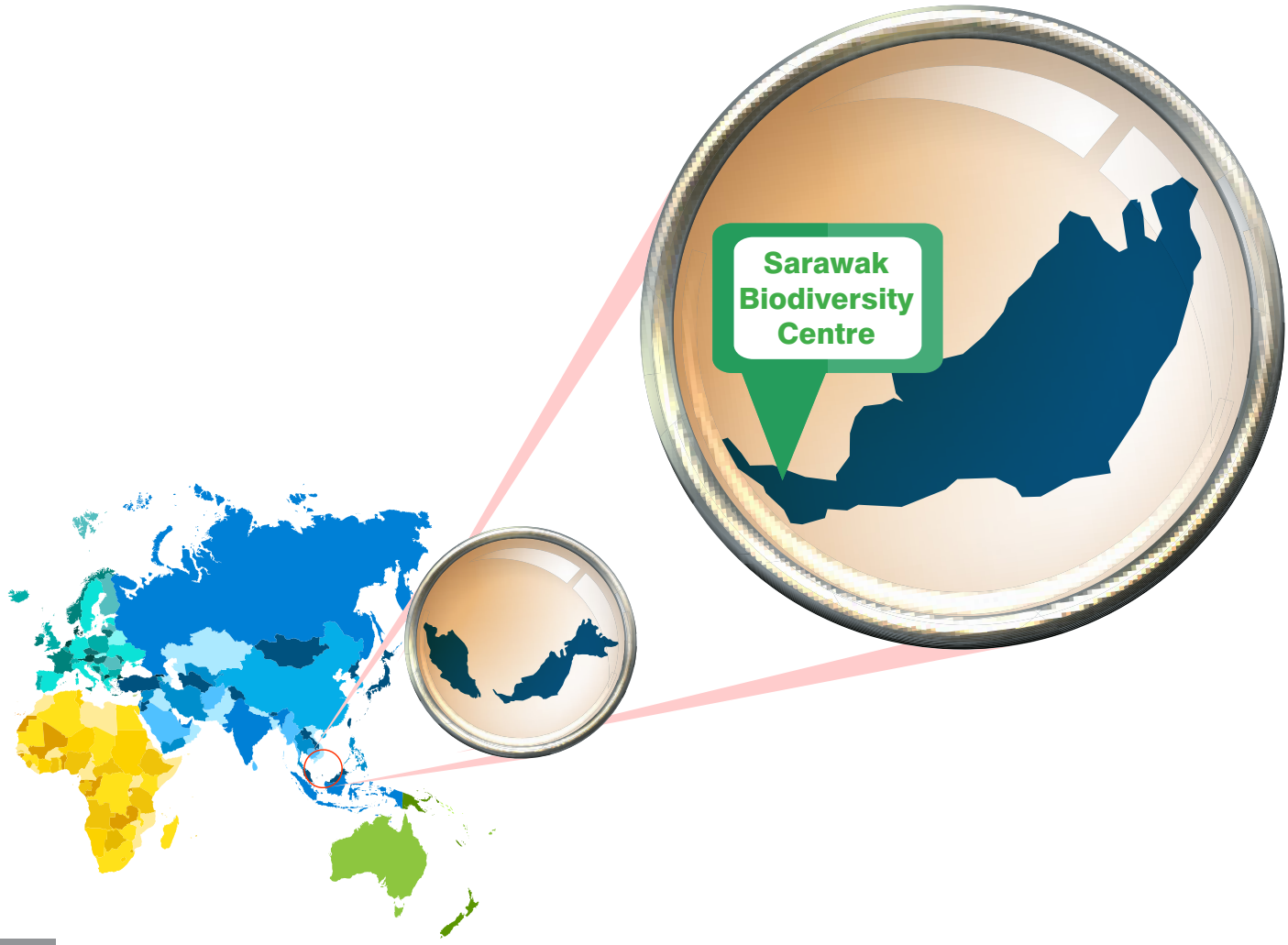
The Sarawak Biodiversity Centre - Harnessing Biodiversity for a Better Tomorrow

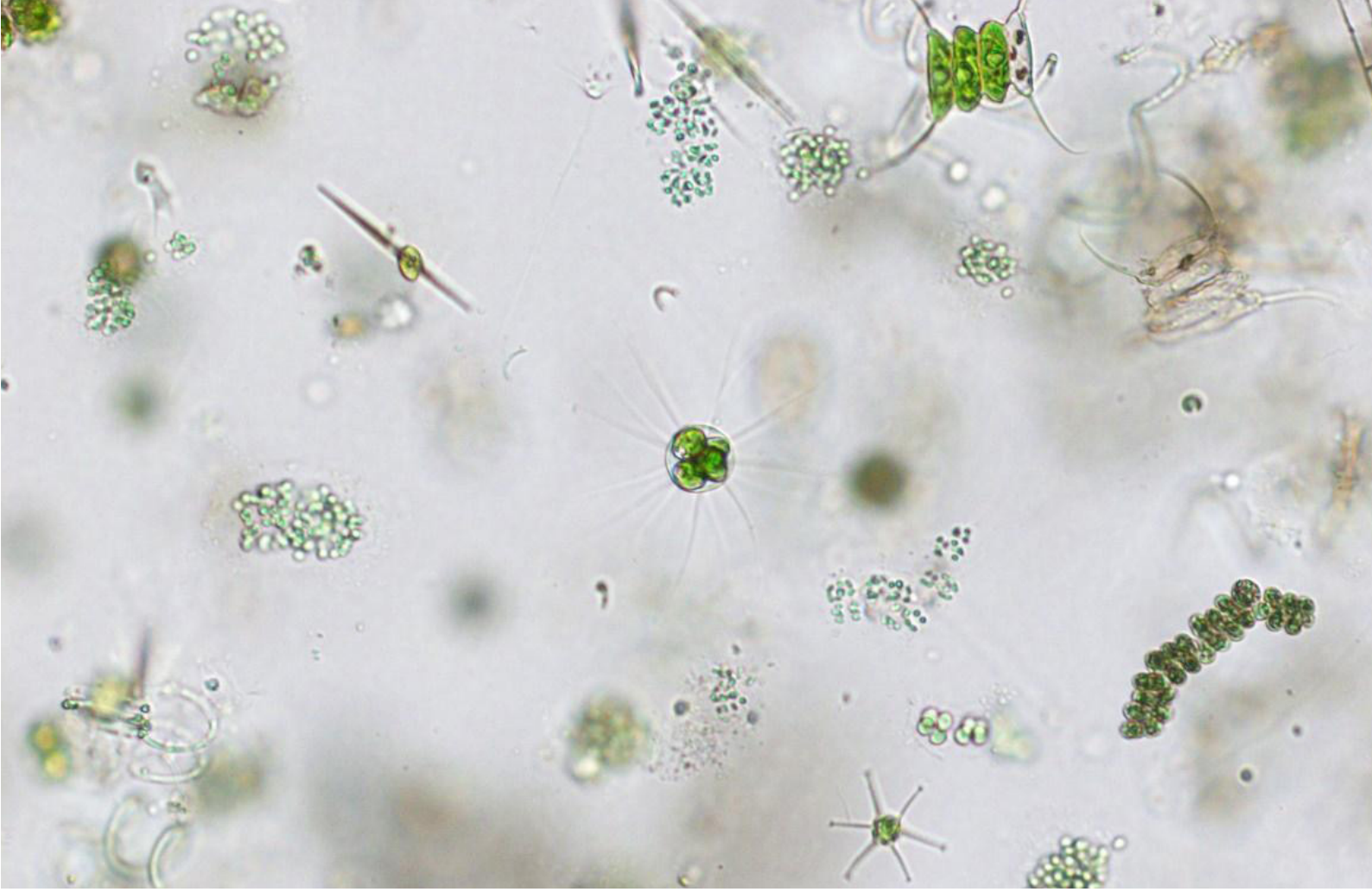
Since its inception in 1998, the Sarawak Biodiversity Centre (SBC) has become a global reference for industry and research organizations interested in developing innovative solutions by harnessing the rich biodiversity of Borneo.

Over the past two decades, SBC has developed a unique value proposition consisting of parallel and complementary efforts (1) to systematically bioprospect Sarawak's diverse aquatic and terrestrial environments to build and make accessible the most complete collection of local plant, and microbial specimens in Borneo, and (2) to compile a deep repository of the traditional knowledge (TK) accrued over centuries by local indigenous communities to help unlock potential applications of this knowledge in areas ranging from healthcare and agriculture to food and cosmetics.

This combined approach has resulted in the establishment of 69 (active and expired) research and development collaborations with partners worldwide that have yielded many new insights and potential commercial products. The local impact of these activities has also been invaluable as efforts to ensure fair and equitable benefit-sharing with indigenous communities and the continuous training of a highly skilled workforce represent key contributions to Sarawak's bioscience and digital technologies–based development programmes.

Entering its third decade, SBC is poised to further solidify its position as a key player in efforts to decode the region's biodiversity and translate that new knowledge into innovative and sustainable solutions for Sarawak and the world. Key goals are to expand its research into commercialization stage, increase its global partnering footprint, attract investment into a soon to be set up bioindustrial park and augment its role as an engine of development for Sarawak and the region overall.





The R&D Biodiscovery Programme—Unlocking Biodiversity's Potential

The Sarawak Biodiversity Centre R&D Biodiscovery Programme is an ambitious framework designed to (1) identify, catalogue and operationalize Sarawak's vast biodiversity resources, (2) build a diverse pipeline of products of potential commercial value, and (3) advance specific lead products to proof-of-concept stage and commercialization. The core elements of the Programme are (1) SBC's Natural Product Library (NPL), which includes a Traditional Knowledge Documentation Programme coordinated with Sarawak's indigenous communities, (2) analytical chemistry, molecular biology and microbiology laboratories equipped to screen the NPL for active compounds, and (3) product development and production scale-up facilities to enable, respectively, product optimization and formulation, and manufacture from proof-of-concept to commercialization scale.

The SBC R&D Biodiscovery Programme comprises internal projects as well as a rich portfolio of collaborative engagements with national and international companies and research institutions.

Activity highlights of 2018 include (1) the NPL's number of plant extracts and microbial extracts surpassing the 25,000 and 29,000 mark, respectively, (2) the expansion of SBC's R&D collaboration network to 69 partnerships with corporations and research institutions in Malaysia, Singapore, Japan, UK, Australia and beyond, and (3) the further build-up of SBC's plant and microbial scale-up production. These activities are already generating economic traction for SBC and Sarawak overall, through the potential value of the products generated and the development of highly trained, local biotechnology specialists.

As the SBC enters its third decade of operation, the breadth and depth of its R&D Biodiscovery Programme continues to make the Centre a regional reference for efforts to decode biodiversity and translate the new knowledge into innovative solutions.

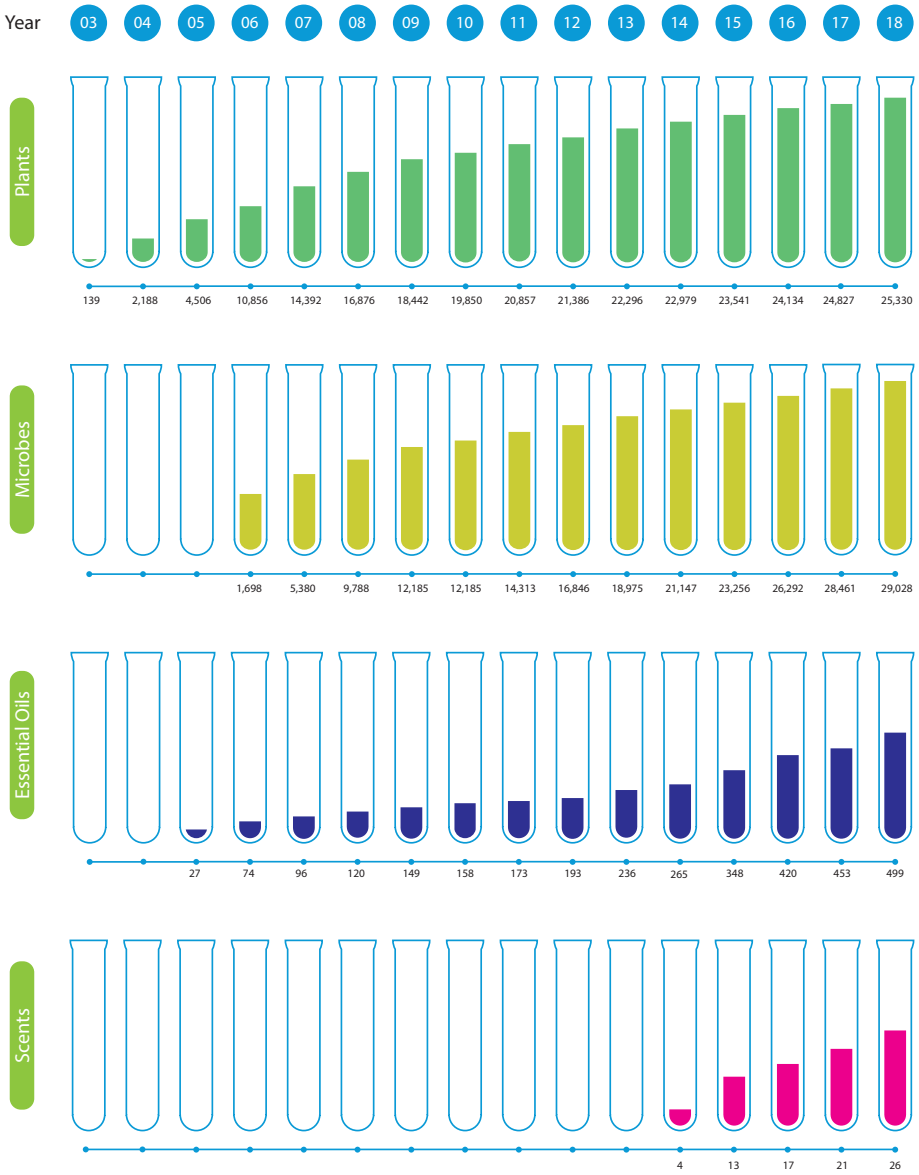
SBC's Natural Product Library—Providing Access to Sarawak's Biodiversity

SBC's Natural Product Library (NPL) comprises a collection of assay-ready plant, and microbial extracts—obtained from over 1,000 plants, algae, fungi, actinomycetes and other microbial species—that provide a window into Sarawak's rich biological resources. SBC's NPL represents the largest such collection in Borneo representing an invaluable resource for researchers and pharmaceutical, cosmeceutical, nutraceutical or biotechnology companies around the world.

In 2018, the NPL grew to a total of 25,330 plant extracts and 29,028 microbial extracts ready for drug discovery screening and other applications. In addition, the NPL contains 499 essential oils and 26 scents extracted from plants, 700 bioassay data from marine specimens, 653 strains of algae and one metagenomic library sequence.

A key added value of the NPL is SBC's Traditional Knowledge Documentation Programme, which coordinates biodiversity sampling with Sarawak's indigenous communities to capture the invaluable knowledge provided by their experience with medicinal and other uses of local plants and microbes.

The NPL continues to provide the foundation for all R&D projects carried out at SBC as it has several advantages: a researcher does not need to go to the jungle and collect for extraction work, avoiding potential physical and safety hazards. A centralized library can also minimise resources necessary to travel to the interior for collection.



Plant Preparation Laboratory—Streamlining Natural Product Extraction

SBC's Plant Preparation Laboratory uses state-of-the-art processes to generate plant extracts of the highest quality for internal use or for shipping to external collaborators.

In 2018, the Plant Preparation Laboratory generated 503 new plant extracts, bringing the total number of plant extracts in the NPL to 25,330.

The entire sample extraction process is managed using SBC's own BioDiversity Natural Product (BioD NatPro) Information Management System to ensure extraction data are properly captured and securely kept. All extracts processed by the Plant Preparation Laboratory are deposited into the NPL.

Analytical Chemistry Laboratory—Characterizing Sarawak's Biodiversity

SBC's Analytical Chemistry Laboratory is in charge of identifying and characterizing bioactive compounds in the NPL extracts as well as of extracting highly purified compounds for internal and external Proof of Concept testing.

In 2018, the laboratory continued growing its external collaboration network.

- Singapore Immunology Network – isolation of bioactive compounds with anti-malarial properties.

- Gretals Australia Pty Ltd./Swinburne University of Australia – identification of plant extracts with potential taste masking and anti-helminthic properties. The laboratory is scaling up extraction for preclinical testing, formulation and product development.

The Analytical Chemistry Laboratory has also continued to produce two of its lead compounds, silvestrol and epi-silvestrol, at milligram scale for preclinical proof of concept studies. Silvestrol is a structurally unique compound present in *Aglaia foveolata*/ *stellatopilosa*, a tree belonging to the Mahogany family (*Meliaceae*). Silvestrol and epi-silvestrol are two highly efficient, non-toxic and specific inhibitors of the translational RNA helicase eIF4A, conferring them with anti-cancer activity. More recently, specific *in vivo* and *in vitro* inhibition of eIF4A-dependent viruses such as hepatitis E virus, Chikungunya virus, Zika virus, and Ebola virus has been documented providing more avenues for the development of silvestrol, and epi-silvestrol as therapeutic agents.

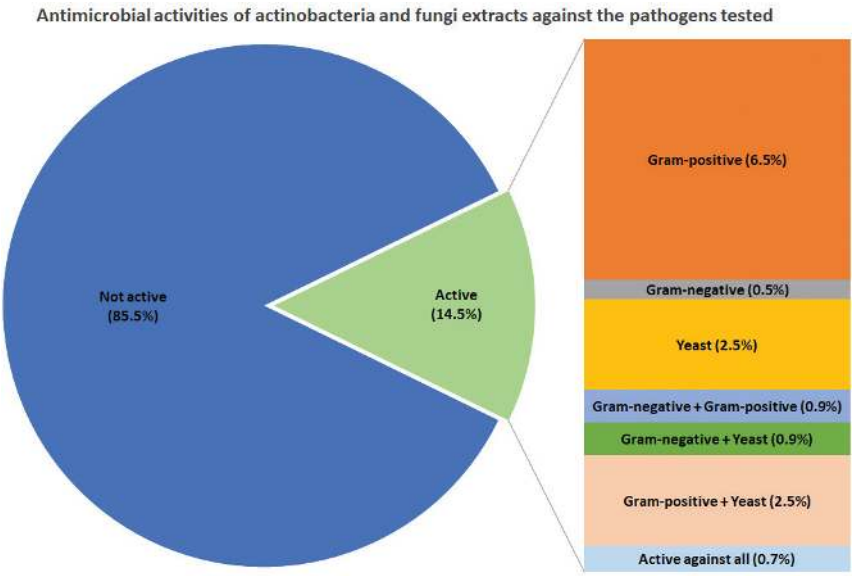
A record 237.9 mg of silvestrol and 257.6 mg of epi-silvestrol were isolated for these programmes in 2018.

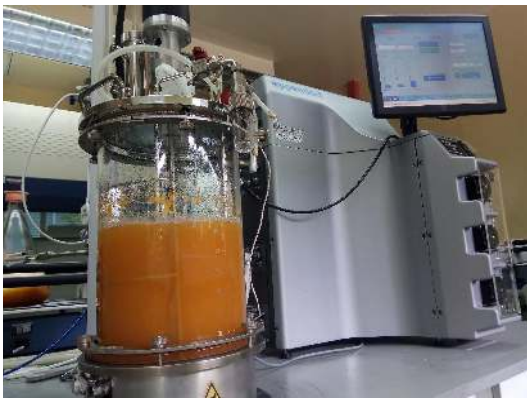
SBC's Analytical Chemistry Laboratory continues to provide core capabilities to support the success of SBC's biodiversity-centered R&D mission.

Microbiology Laboratory—Unlocking Microbial Biodiversity

SBC's Microbiology Laboratory focuses on the isolation and identification of microorganisms from the Sarawak rainforest ecosystem, particularly actinobacteria and fungi, for their potential industrial, healthcare or agricultural application.

In 2018, the Microbiology Laboratory generated 567 new microbial extracts, primarily from actinobacteria and fungi, bringing the total number of microbial extracts in the NPL to 29,028. In-house antimicrobial screening showed that 82 (14.5%) of the 567 extracts exhibited narrow-spectrum activities (able to inhibit the growth of either Gram-positive pathogen, Gram-negative pathogen or yeast) and also broad-spectrum activities (inhibit the growth of two or more group of pathogens). Specifically, 4 (0.7 %) extracts were active against all three group of pathogens tested. Further characterization of these extracts is underway. All extracts processed by the Microbiology Laboratory are deposited into the NPL.





Fermentation of actinobacteria strain in a bioreactor for production of bioactive compounds.

Ongoing projects at the Microbiology Laboratory include R&D of (1) natural decomposer strains for bio-composting applications, (2) high pigment producers for the production of natural colorants of industrial interest, and (3) producers of bioactive compounds of potential therapeutic interest. These projects take full advantage of the Microbiology Laboratory's screening and pilot scale bio-fermentation capabilities.

Sampling expeditions for fungi and actinomycetes in 2018 included campaigns at various National Parks in Sarawak—Maludam, Mulu, Niah, Bako, Kubah, and Gunung Gading—and the Sabal Forest Reserve. In addition to the expansion of SBC's microbial collection, these expeditions resulted in further development of SBC's more recent foray into the study of the local mushroom community. Over 90 mushrooms specimens were collected, with the vast majority belonging to the *Polyporales* family, a group of mushrooms known for their health benefits. Characterization of these mushrooms is ongoing.

Molecular Biology Laboratory—Identifying and Characterizing Biodiversity

SBC's Molecular Biology laboratory is equipped with the advanced technologies to identify and characterize the biological resources of Sarawak. The laboratory provides sequencing, immunoassay, cytotoxicity and other bioactivity screening platform for the Centre.

In 2018, Molecular Biology Laboratory initiated an effort to upgrade its sequencing facility to offer next generation sequencing capabilities. With this high-throughput and speed capacity, enables complete genome to be sequenced, particularly the bacterial genome. Once implemented, SBC will become the first entity to provide whole genome sequencing capabilities in Sarawak.

Cell-based assay using enzyme-linked immunosorbent assay (ELISA) performed in a sterile and enclosed biosafety cabinet.

A key focus of the Molecular Biology Laboratory is screening the NPL for potential inhibitors or inducers of biological activities by using cell-based assays. The screens have been targeted on anti-inflammatory, anti-cancer, cytotoxicity and anti-proliferative potential. One of the assays is detection and quantification of inflammatory markers such as tumor necrosis factor-alpha (TNF-α) or interleukins (ILs) for preliminary proof of principles studies. Other project includes transcriptomic profiling to deduce gene expression and signalling pathways, thereby providing insight into other therapeutic potential.

Fluorescence signals measurement with Cytation 3 reader for detection and quantification of target protein.

Plant Tissue Culture Laboratory—Propagating Sarawak's Plant Richness

SBC's Plant Tissue Culture Laboratory (PTC) provides a key service along the jungle to lab to commercialization axis. The PTC's role is to implement protocols to facilitate plant propagation for large scale production raw materials for product development and commercialization. The PTC is continuously evolving to meet the individual needs of each project so as to maximize yield and a plant's horticultural potential.

Highlights of 2018 include the establishment of tissue culture protocols and mass propagation processes for *Litsea cubeba* (Pahkak), *Daemonorops spp.* (Dragon's Blood), *Shorea macrophylla* (Engkabang Jantung), *Boesenbergia stenophylla* (Jerangau Merah) and *Psychotria sp.* (Engkerabai). In particular, mass propagation of *B. stenophylla* and *Psychotria sp.* resulted in a total of 14,099 and 1,152 subculture plantlets, respectively.

In addition to plant propagation using tissue culture techniques, PTC uses vegetative propagation techniques to support plant material production for research and scale up purposes. The PTC also manages an approximately one acre pilot scale planting plot at the Agriculture Research Centre (ARC) for experimental plots. Pilot scale studies are conducted to provide proof of concept that plants of interest can be cultivated in a plantation setting, to generate sufficient biomass to extract essential oils, and to collect data on parameters such as production per area size, quantity of oil per area size and quantity of resources needed.

In 2018 PTC conducted eight pilot scale planting projects at the ARC with *Cymbopogon nardus* (Serai wangi), *Ocimum sanctum* (Kemangi), *Picria fel-terrae* (Sipudun), *Psychotria sp.* (Engkerabai), *Pogostemon cablin* (Nilam), *Costus speciosus* (Siluk), *Piper sarmentosum* (Kadok) and *Litsea cubeba* (Pahkak).

Agriculture Research Centre (ARC) planting plot

Product Development—Formulating Biodiversity

The Product Development team at SBC focuses on extraction of essential oil and formulation of personal care products.

In 2018, the Product Development team deposited a total of 46 essential oils in SBC's NPL, bringing the total number of essential oils in the library to 499. All essential oil extracts were analysed with Gas Chromatography Mass Spectrometry (GCMS) to identify their chemical composition.

Other activities by the Product Development team included product formulations of natural and herbal based products, liquid hand wash and foot spray.

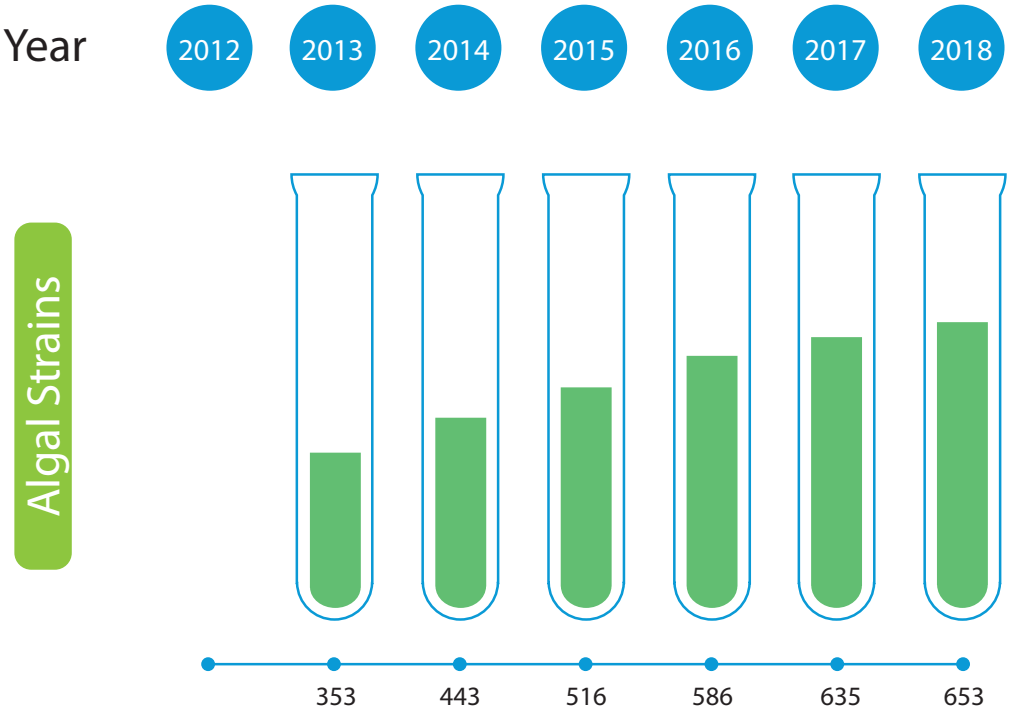
One important focus of the Product Development team is the Biodiversity Makes Scents Project, an effort to reconstruct scent accords of specific flowers. Scent accords are used as ingredients for formulating a range of fragrances and other personal care products. In 2018, the team developed scents from with two local plants: *Magnolia champaca* and *Cananga odorata*.

Magnolia champaca (orange champaca), a plant native to Malaysia, has a flower that emits a very strong sweet fragrance. Nineteen distinct compounds were identified in the scent through gas chromatography mass spectrometry (GCMS) analysis. The scent profile was used to reconstruct the volatile compounds into a scent accord. The final accord consists of only ten ingredients.

Cananga odorata (ylang-ylang) is a perennial tropical tree native to Malaysia. The flower emits a strong fragrance with a hint of citrus. A total of 51 compounds were identified through GCMS in the living flower. Four fragrant compounds were used in the reconstruction of the flower scent into a scent accord.

The goal is to create the biggest library of scent tracks in Malaysia that can be scaled up for production of Borneo-branded products.

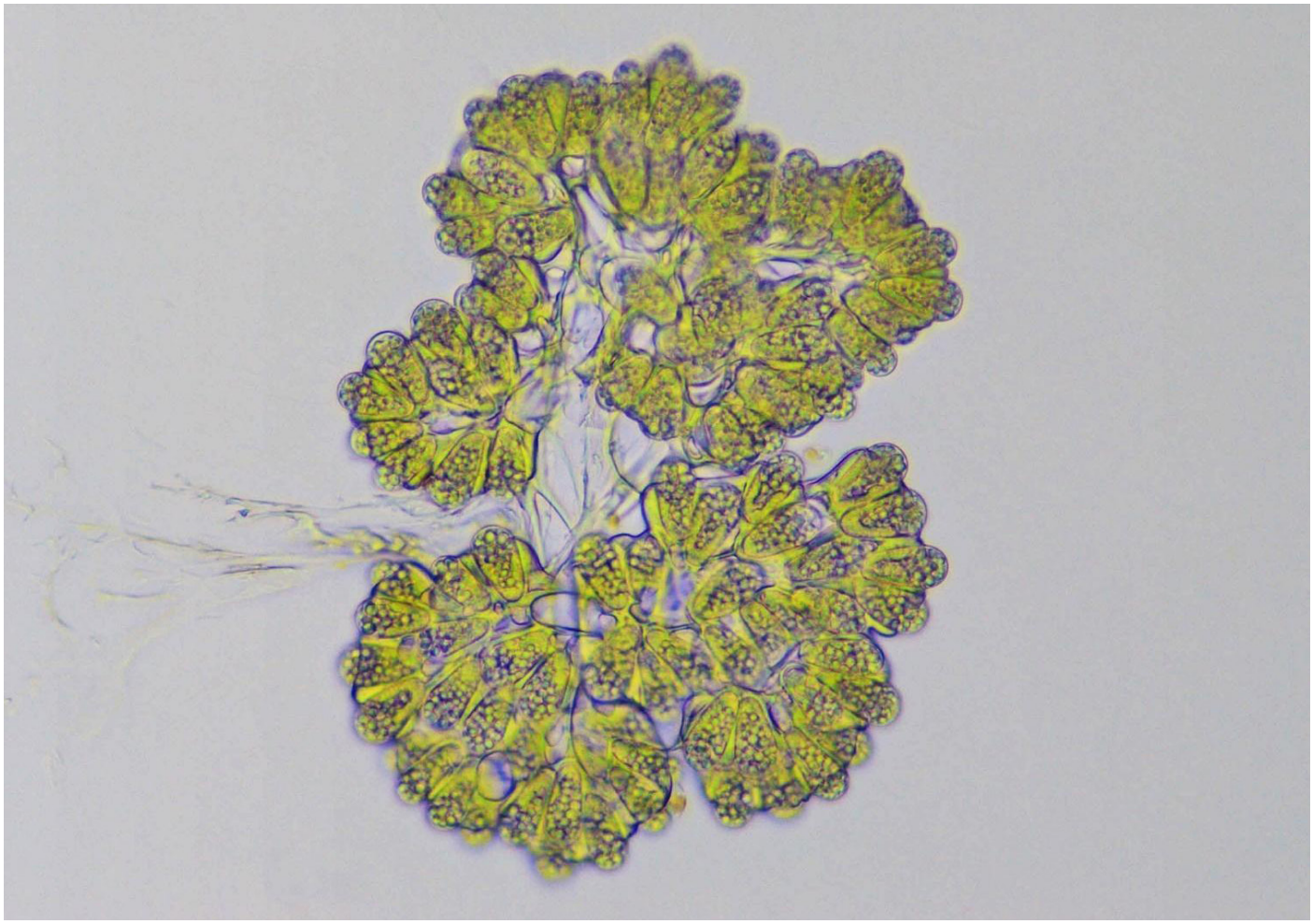
Algae Cultivation Facility—Scaling Up Algal Production



In Year 2018, SBC set another milestone in Southeast Asia by installing the largest outdoor algae cultivation facility of its kind in the region. The facility, which was developed in partnership with Mitsubishi Corporation (MC), a global integrated business enterprise, and designed in collaboration with Japan-based Chitose Laboratory Group, was built at a cost of RM1.5 million (approx. USD360,000) and completed in November 2018.

The SBC-MC algae cultivation facility is an optimized outdoor photobioreactor system that maximizes yield and minimizes cost by growing indigenous microalgal strains adapted to Sarawak's climate and light conditions in 24m long, thin film, low density polyethylene flat panel bags. The high surface area to volume ratio, optimal gas-liquid transfer, easy operation and minimal contamination risk afforded by the flat panel bags results in improved photosynthetic activity, high biomass productivity, and lower production cost. Once fully operational, the facility is expected to yield up to 6 tonnes of dried algal biomass per year on an area of 1,000m^2.

The SBC-MC algae cultivation facility represents the culmination of a collaboration with MC initiated in 2012 with the aim to identify useful microalgae indigenous to Sarawak for biomass, feedstock, biofuel, food, and/or health supplement production. Over the past six years, and following close to 100 sampling expeditions to freshwater and marine environments all across Sarawak's geography, SBC has assembled an algal collection of over 650 strains representing 75 genera. *In silico* analysis has revealed remarkable functional diversity among the strains—their *in vitro* evaluation is ongoing.



A colony of Botryococcus cells embedded in organic matrix.

Algae Cultivation Facility about 1,000m^2 that can yield dried biomass of 6 tonnes per year.

Partnering with SBC—Strengthening a Culture of Collaboration

Sarawak represents one of the richest and oldest biodiversity hotspots in the world, and as such, it is in a unique position to accelerate the translation of potential applications from the jungle to the lab and on to the global market. Over the past two decades, SBC has established 69 strategic partnership—32 of them nationally and 37 internationally such as Australia, United States, United Kingdom, Japan, China and others. These collaborations are designed to maximise the value-added of products and services developed from Sarawak's biodiversity resources.

Of the 44 active collaborations (as of 31 December 2018), the majority of them, 30, focus on bioprospecting Sarawak's biodiversity to discover, develop and produce unique natural products for applications ranging from healthcare and agriculture to food and cosmetics. The remaining collaborations include consultancy work, scientific exchange programmes and product manufacturing services.

SBC's active bioprospecting partnerships are evenly split between national and international collaborations. About two-thirds (21) of the collaboration are with corporate entities and the remaining nine are with universities and other research institutions.

Some highlights of new partnerships established in 2018 include:

1 **National University of Singapore, Singapore**

Identification of anti-inflammatory drug candidates for pharmaceutical or nutraceutical application using SBC's TK-based plant research platform.

2 **Macau University, Macau, China**

Identification of central nervous system–modulating drug candidates for pharmaceutical application using SBC's TK-based plant research platform.

3 **University of Malaysia (UNIMAS), Sarawak, Malaysia**

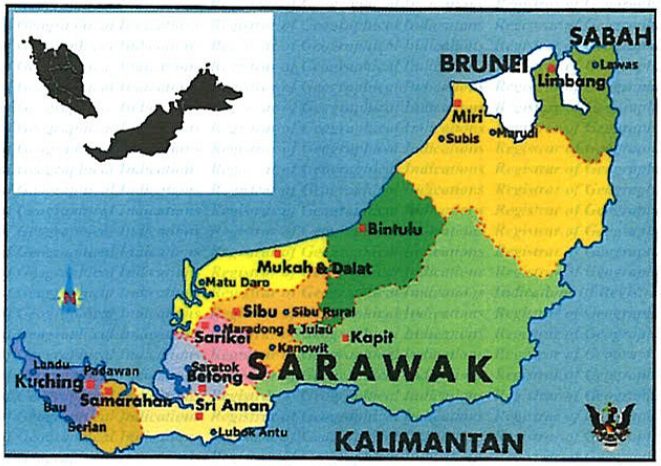
Project 1: Identification of neuroprotective compounds in an *in vitro* stroke model using SBC's TK-based plant research platform.

Project 2: Screening for drug (antibiotics) candidates for ophthalmic applications using SBC's TK-based plant research platform.

4 **TOYO INK SC Holdings Co. Ltd, Tokyo, Japan**

Identification of colourants, cosmetics and health food products using SBC's TK-based plant research platform.

SARAWAK ADENOSMA



Geographical Indication No.	:	**GI2015-00018**
Class	:	**3**
Name of Registered Proprietor	:	**Sarawak Information Technology and Resources Council (SITRC)**
Registered From	:	**14 Ogos 2015**
Expiry Date	:	**13 Ogos 2025**
List of Goods	:	**The plant itself, Sarawak Adenosma and the by product; an essential oil.**

From the beginning until 31 December 2018

Over the past 21 years, SBC has developed and owns three patents, two trademarks and two Geographical Indications as below:

Year	Type	Title
2002	Patent	Therapeutic Compounds & Methods (Patent number US 6,710,075 B2)
2010	Patent	Method for Identification of *Aglaia Stellatopilosa* (Patent Number WO2012030206A1)
2011	Trademark	LitSara® registered under Class 3, 5, 16 and 21
2011	Geographical Indication	Sarawak Litsea (GI2011-00001), registered under class 3
2015	Trademark	Adenosara®, registered under class 3, 5, 16 and 35
2015	Geographical Indication	Sarawak Adenosma (GI2015-00018), registered under class 3
2018	Patent	LitSara® related – oral care

Traditional Knowledge Documentation Programme - Engaging Sarawak's Indigenous Communities

SBC's Traditional Knowledge (TK) Documentation Programme serves as a model for the region for how to effectively engage local indigenous communities in efforts to unlock the potential of biodiversity while ensuring its preservation. Since 2004, SBC's TK Documentation Programme has conducted workshops and specimen collection campaigns with 20 out of 28 indigenous communities from 88 villages, resulting in 6,156 plants being recorded through 2018. Of these, 1,328 species have been classified and identification efforts on the remaining plants are ongoing.

Activity highlights in 2018 include seven TK consultative meetings with community leaders, eight TK documentation workshops, seven specimen collection campaigns across Sarawak, and one biodiversity and wildlife protection awareness workshop.

1st Traditional knowledge Documentation Workshop on 2-5 March 2018 at Long Sayan, Baram

The breakdown of unique plants collected in collaboration with each community since 2004 is as follows:

Community	Location		Total Plant Collected	Total
Bidayuh	1	Kampung Duyoh, Bung Jagoi, Bau, Kuching	46	1,167
	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, Kuching	14	
	9	Kampung Peninjau Baru, Serumbu, Bau, Kuching	16	
Iban	1	Rumah Skatap, Betong	276	1,353
	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 Bana, Sebauh, Bintulu	70	
	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	35	
	16	Karangan Mong, Lubok Antu, Sri Aman	20	
	17	Rumah Kino, Lubok Antu, Sri Aman	17	
	18	Rumah Tanjung Baru, Maludam, Betong	16	
	19	Kampung Jambu Kelampak, Ulu Layar, Betong	12	
	20	Rumah Sabang Babang, Krian, Saratok, Sarikei	14	
	21	Rumah Charlie, Nanga Melipis, Kanowit	14	
	22	Rumah Abok/ Kampung Mulong, Beluru	20	
	23	Rumah Encharang, Banting, Lingga, Sri Aman	20	
	24	Kampung Pulau Sibau, Balleh, Kapit	40	
	25	Rumah Nyalong, Pakan, Sarikei	34	
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	

Community	Location		Total Plant Collected	Total
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	257
	2	Long Ikang, Marudi, Miri	58	
	3	Long Palai, Baram, Miri	31	
	4	Long Apu, Baram, Miri	14	
	5	Uma Kelap, Sungai Asap, Belaga, Kapit	27	
Lun Bawang	1	Ba' Kelalan, Lawas, Limbang	48	603
	2	Long Kerabangan, Lawas, Limbang	184	
	3	Long Telingan, Lawas, Limbang	120	
	4	Long Sebangang Asal, Lawas, Limbang	49	
	5	Long Tuyo / Paya Maga Expedition, Lawas, Limbang	137	
	6	Long Tuyo/ Long Sukang, Lawas, Limbang	45	
	7	Pa' Berunut, Lawas	20	
Melanau	1	Kampung Jebungan, Mukah	96	235
	2	Kampung Pangtray, Daro, Mukah	48	
	3	Kampung Jemoreng, Matu, Mukah	30	
	4	Kampung Paloh, Belawai, Mukah	20	
	5	Igan, Mukah	21	
	6	Kampung Tanam Dalat	20	
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, Miri	9	
	6	Long Malim, Murum, Bintulu	38	
	7	Long Sayan, Long Lama, Apoh Baram	18	
Punan	1	Rumah Ado, Tatau, Bintulu	39	39
Selako	1	Kampung Pueh, Sematan, Kuching	112	112
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

Community	Location		Total Plant Collected	Total
Malay	1	Sundar, Lawas, Limbang (with Lun Bawang & Chinese)	16	178
	2	Maludam area, Maludam, Betong (with Iban community)	25	
	3	Kampung Hulu, Bako, Kuching	15	
	4	Kampung Hilir, Bako, Kuching		
	5	Sebuyau area, Samarahan	48	
	6	Kampung Pasir Pandak, Santubong, Kuching	28	
	7	Kampung Selabat/ Pasir Putih, Muara Tebas, Kuching	24	
	8	Kampung Bangka Semong, Muara Tuang	22	
Beketan	1	Rumah Seking, Nanga Merit, Kapit	19	19
Sa'ban	1	Long Banga expedition, Baram	65	65
Sekapan	1	Kampung Sekapan Piit, Belaga, Kapit	33	33
Tanjong	1	Kampung Man Ili, Kapit	24	24
Tagal	1	Long Tengoa, Lawas	20	20
Berawan	1	Long Terawan, Mulu, Miri	22	22
			Total Number of Plants Collected	**6,156**

Toward a Sustainable Use of Biodiversity in Sarawak—Implementing the Nagoya Protocol on Access and Benefit Sharing

Since its inception, SBC has been at the forefront of efforts to implement international standards established following the 1992 Convention on Biological Diversity (CBD) in Rio de Janeiro regulating access to genetic resources and the fair and equitable sharing of benefits arising from their utilization. Over the years, a supplementary agreement to the CBD, the Nagoya Protocol on Access to Genetic Resources and the Fair and Equitable Sharing of Benefits Arising from their Utilization (ABS) was proposed and signed to provide greater legal certainty and transparency to the users and providers of genetic resources.

• The LitSara® Project

The LitSara® project, set in motion in 2014 under the auspices of the Global Environment Facilities/ United Nations Development Programme (GEF/UNDP) and the Ministry of Water, Land and Natural Resources (Kementerian Air, Tanah dan Sumber Asli; KATS), represents the Centre's first implementation of the CBD standards on the access of traditional knowledge and its benefit sharing framework. The LitSara® project, a partnership with five indigenous groups built around the propagation and harvesting of *Litsea cubeba*, the source plant for LitSara® essential oil, was set in motion by the signing of a Prior Informed Consent agreement conforming to the 2010 Nagoya Protocol on Access and Benefit Sharing. This supplementary agreement to the CBD stipulates the right of indigenous communities to manage their village's biological resources and to negotiate benefit sharing terms on the commercialization of those resources.

LitSara® essential oil is the active ingredient in *Litsea cubeba* (local name: pahkak/ tenem), This plant is used by the indigenous people of Sarawak for different purposes, including food flavouring and as a natural remedy for stomach ache and back ache.

With the research and development programme for LitSara® reaching maturity and entering the commercialization phase, SBC has conducted advanced discussions and preparatory work in 2018 towards drafting the first benefit sharing agreement (BSA) with five indigenous groups involved in the project from the beginning—the Bidayuhs of Kampung Kiding, Padawan; the Lun Bawangs of Long Telingan and Long Kerebangan, Lawas; and the Kelabits of Pa'Ukat and Pa'Lungan, Bario. The negotiations have been very successful, and a BSA was scheduled for signing in the first quarter of 2019.

• The 'Dragon's Blood' and *Adenosma nelsonioides* Project

The Project on 'Dragon's Blood' and *Adenosma nelsonioides* was carried out with the support from the Global Environment Facilities/United Nations Development Programme (GEF/UNDP) to design and implement the necessary infrastructure to supply raw materials derived from Sarawak's biological resources and create value for the indigenous communities.

The inventory and collection of *Daemonorops spp.*, also known as 'dragon's blood' were for medicinal use. Resin obtained from the fruits of the rare rattan palm genus *Daemonorops* has been traditionally used by the Bidayuh, Lun Bawang, Iban and Kelabit communities to dye mats, baskets and other handcrafts. It also has been used in folk medicine as a natural remedy for fractures, wounds, inflammation, gastrointestinal disorders, rheumatism and blood circulation dysfunctions. In traditional Chinese medicine, Dragon's blood is widely used for clinical dressings and other applications. The major active compound in Dragon's blood is dracorhodin.

Adenosma nelsonioides (Diesel plant) is traditionally used to get rid of fleas in chicken and lice

in dogs. This herbaceous plant is known by the Bidayuh community of Kampung Semadang, Penrissen as Bunga Taang.

SBC is developing a benefit sharing programme with indigenous communities at Kampung Kiding, Padawan, Kampung Semban, Padawan, and Kampung Pueh, Lundu, to grow and process *Daemonorops spp.* as well as the propagation and oil distillation process of *Adenosma nelsonioides* at Kampung Semadang. Activity highlights in 2018 on *Daemonorops spp.* include propagation and inventory campaigns with several indigenous groups involved in the project while the propagation, inventory and hydro-distillation training workshops were held in 2018 on *Adenosma nelsonioides* with the Bidayuh community of Kampung Semadang, Penrissen.

- **Other Benefit Sharing Projects**

Collaborations with SBC partners such as National University of Singapore (NUS) and GRETALS Australia Pty Ltd. have also targeted plants as sugar control and taste masking agents. SBC has established inventory of these plants to map the best plant lines for production of raw materials.

All the above projects illustrate SBC's central role in designing biodiversity-based programmes in Sarawak that create value chains along the journey of translating potential applications from the jungle to the lab and on to the global market that benefit all parties involved—from local communities to global partners.

Clockwise: LitSara® Products from the plant Litsea cubeba; Fruits of Dragon's Blood (Daemonorops spp.) and Womenfolk of Pa'Lungan preparing to distill Litsea cubeba leaves.

Laila Taib Ethnobotanical Garden—Displaying Sarawak's Plant Biodiversity

The Laila Taib Ethnobotanical Garden provides a site for *ex situ* conservation of useful indigenous plants in a setting that allows the public to learn about plant diversity in Sarawak and the traditional knowledge related to it.

The garden features a total of 515 plants from 92 families and representing 411 unique species contributed by 13 ethnic communities participating in SBC's Traditional Knowledge Documentation Programme—the Bidayuh, Penan, Iban, Kelabit, Kenyah, Kayan, Lun Bawang, Punan, Bisaya, Selako, Tabun, Melanau and Malay.

In 2018 the garden hosted various schools and corporate entities totaling a total of 80 visits during which visitors were briefed on the importance of documenting and transmitting traditional knowledge of useful indigenous plants in Sarawak.

Biodiversity-Biotechnology Awareness & Appreciation Programme

The SBC Biodiversity – Biotechnology Awareness and Appreciation programme targets creating awareness towards the State's rich biodiversity and biotechnology initiatives among the general public of Sarawak and specific target groups such as scientists, researchers, policy makers, business and industry players.

These initiatives were carried out through activities such as Awareness and Appreciation Visits to SBC for numerous interest groups including schools, NGOs and government departments and agencies; participating in exhibitions; carrying out activities with schools, organizing public talks; and through the Centre's annual flagship event, the Biodiversity Day celebrations held at its premises.

In 2018, the programme carried out/organised and participated in the following activities:

No	Activity	Number of Activities Achieved in 2018
1	Awareness & Appreciation Visits (schools/ institutions/ organizations)	80 Visits
2	Public Awareness Visits to Schools/ Divisional Awareness Talks	1 Visit
3	Public Awareness Talks/Workshops	16 Public Talks/Workshops
4	Participation in School Programme	6 Programmes
5	Participation at Exhibitions	18 Exhibitions
6	Press releases/Articles/Features	16 Press Releases/Articles published
7	SBC Publication/Promo Materials	5 Publications
8	SBC Open Day	1 Event

Bioindustrial Park and SBC Bioprocess Commercial Centre

In 2017, the Right Honourable Chief Minister has directed SBC to broaden its scope by converting its research findings into commercial uses, emphasizing the State's view in bio-entrepreneurial sector. The Right Honourable Chief Minister highlighted on the importance for SBC to further its activities in product development, marketing and commercialization.

In April 2018, The Right Honourable Chief Minister announced the setting up of a Bioindustrial Park at Kota Samarahan under SBC. The State Development Committee approved an allocation of for the establishment of the Bioindustrial Park and Bioprocess Commercial Centre on 21 November 2018 as a 'Project Rakyat'. This also include a Masterplan Study for the Bioindustrial Park in Sarawak. By December 2018, three (3) sites have been identified for the Park and these were located within the Kota Samarahan area.

The establishment of the Park not only jumpstart bioindustries in Sarawak but also will attract foreign biotech companies to locate to our State. To achieve and sustain these highly beneficial relationships, the State needs to showcase its achievement in efficiency and must provide attractive incentives to compel biotech companies to develop their businesses in Sarawak.

The core concept of the Park is that it embraces the commercialization of biodiversity research, and thereby promotes itself as a hi-tech investment opportunity and resource for biotech companies in the bioeconomy. The Park will:

i. be the leading centre of the State to develop bio-business opportunities and commercialization of research
ii. House highly organized infrastructure and biotech-equipped platform for manufacturing key marketable Sarawak products
iii. Attract and spur both local and foreign investments into the State through public –private partnership
iv. foster the growth of new businesses that will generate new income, employment, and advancement of innovation and technology

SBC will be the anchor agency to jump-start Bioindustrial Park through the setting-up of the bioprocessing commercial centre. Other manufacturing business will continue to populate the Park to syndicate a sustainable drive and income through which the Park will become self-supporting.

Several site for the development of Bioindustrial Park and SBC Bioprocess Commercial Centre

SBC Biodiversity Day 2018

On 12 May 2018, SBC organized its annual Biodiversity Day at the Imperial Hotel Kuching with the theme "Celebrating 25 Years of Action for Biodiversity" which was also the theme for the International Day for Biological Diversity. The International Day for Biological Diversity is observed worldwide, on 22 May each year.

The one-day event was aimed to provide members of the public, particularly students, a better understanding of science and biodiversity that has a range of applications from pharmaceuticals to daily use items.

Various interactive hands-on activities were carried out organized by themes, namely, Scents of Life, World of Molecular Biology, Plant Culture for a Greener World, Chemistry of Life, Microbes around Us, and the World of Biodiversity in Algae.

In line with the international theme of the CBD, a series of talks was also held concurrently with the hands-on activities. The series of talks began with a keynote address by Prof. Emeritus Dato' Dr. Abdul Latiff Mohamad who is a Research Fellow in Botany & Conservation Biology at Universiti Kebangsaan Malaysia, and addressed Biodiversity, Ecosystem Changes and Conservation and Conservation in Malaysia.

The keynote speech was followed by a talk Green Intelligence by Veera Sekaran of Greenology, Singapore, and another talk on the contributions of the Institute of Biodiversity and Environmental Conservation (IBEC), UNIMAS, towards biodiversity conservation research in Sarawak by Prof Dr Andrew Alek Tuen of UNIMAS.

The series of talks continued with topics on dugong conservation, wildlife photography and incorporating traditional ecological knowledge in the context of tourism by James Bali (Sarawak Forestry Corporation), Ch'ien Lee (wildlife photographer) and Victor Luna Amin (Sarawak Forestry Corporation), respectively, before concluding with a talk by Dr Melvin Gumal on field research data and conservation interventions from orang-utan, elephant, tiger and marine work carried out by the Wildlife Conservations Society in Malaysia.

A total of 830 visitors participated in this annual flagship event.

Rainforest World Music Festival (RWMF 2018)
Venue: Sarawak Culture Village
Date: 13-15 July 2018

It was the time of the year again when the amalgamation of nature, culture and world music took place at the Sarawak Cultural Village in Santubong, for the Rainforest World Music Festival. For the second year running, Sarawak Biodiversity Centre participated in this exciting event with the theme "Scents of Borneo". The Sarawak Biodiversity Centre partnered with the communities involved in the LitSara® project to run the Scents of Borneo booth.

There were plenty of products derived from LitSara® essential oil showcased such as Natural Soap, Body Wash, Shampoo, Air Freshener, Sniff Jar, Corporate Gift Set and Essential oil. Our hot selling products during the exhibition was the Air Freshener.

"Rainforest Basin" station at the booth

Visitors trying out the product

In 2018, for the first time, traditional Borneo Herbal Steam was introduced. A combination of local herb plants such as Sembong, Serai Wangi and Halia Dayak (local ginger) helps to refresh the skin. With a purchase of any LitSara® products worth RM30.00, customers were given a free session on traditional herbal steam for 5-10 minutes per person.

Visitor enjoyed Traditional Borneo Herbal Steam session

SBC also presented its new, soon to be launched product, "Therapeutic Foot Spray". With several choices, namely A Million Steps, Bearfoot and A Love Story, each of the foot sprays has its own unique and refreshing scent extracted from local plants of Sarawak to pamper their tired feet.

Visitors showing off their happy feet

Kids also trying out the foot booster session

SBC added a hands-on activity, “DIY Aromatherapy Oil”. With a drop of LitSara® Essential Oil mixed with other aromatherapy oils, visitors were allowed to mix their own preferred aromatherapy concoctions.

One of the visitors trying out the aromatherapy oil.

A handmade soap making demonstration was also held with the support of a community representative, Ester Supang Duncan from Pa'Ukat, and led by SBC's personnel.

Photo of Ester Supang Duncan and Ruth Wong, SBC staff before kick-off the demo.

Crowds participation in the handmade soap making.

The SBC team also organised 'The Most Refreshing Selfie Moment', 'Most Creative Review' and 'Most Awesome Video Review'. Daily winners were selected based on their creativity and best review of the products.

Customers pose with LitSara® products

Selfie of the day!

Sales during the 3-day exhibition were encouraging. SBC thanks the RMWF 2018 organizers for all their support and the Sarawak Tourism Board for the recurring invitation.

International Conference on Beneficial Microbes: Microbes for the benefit of Mankind. At Kuching Exhibition 2018, The Waterfront Hotel, Kuching

The Sarawak Biodiversity Centre and Microbiome International (M) Sdn Bhd hosted the International Conference on Beneficial Microbes (ICOBM-2018) at Kuching from 30 July to 1 August 2018, for the first time since its inception in 2014.

The Conference was held at the Waterfront Hotel in Kuching under the theme, 'Microbes for the Benefit of Mankind'.

The ICOBM provided a platform for interaction and exchanging research ideas among experts from various fields of beneficial microorganisms.

Three major tracks covering the most important aspects of beneficial microorganism innovation were presented at the Conference, namely: Food Microbiology, Science and Technology, Medical and Health and Agri & Aquaculture and Environmental.

The event also emphasised the importance of industrial collaborations and the interconnections between research and industry.

YB Dr Annuar Bin Rapaee, Assistant Minister of MESTR officiated the opening ceremony of ICOBM.

Question and Answer session during the oral presentation

Pertanian, Hortikultur dan Agro Pelancongan Malaysia 2018 (MAHA 2018), Tapak Ekspo Pertanian Malaysia Serdang (MAEPS)

As the mainstay of the nation's food sovereignty and food security, agriculture remains the focal point of government efforts to promote it in communities throughout Malaysia. The 2018 edition of the biennial MAHA 2018 event, that takes place together with The Farmers, Livestock Producers and Fishermen's Day (HPPNK), actively promotes agriculture and agro-based industries, showcasing all the different components of this fast-growing industry.

Sarawak Biodiversity Centre participated in MAHA 2018 and focused on featuring LitSara® products.

Ms Melissa Chang, SBC officer explained on LitSara® benefit to visitor during the event.

17th Meeting of the Consortium for Globalization of Chinese Medicines (CGCM), 8-10 August 2018, BCCK, Kuching

The Consortium for Globalization of Chinese Medicine first started born in 2003 from a meeting attended by sixteen leading institutions in traditional Chinese Medicine organized by the Faculty of Medicine at The University of Hong Kong. It was during this meeting that a memorandum of understanding was signed by all sixteen founding institutions to form the Consortium for Globalization of Chinese Medicine (CGCM). The CGCM has since grown to 157 member institutes and 24 industrial affiliates.

The CGCM positions itself as a global, non-profit, non-discriminatory and non-political organization with a mission to advance Chinese herbal medicine to benefit all of humankind through joint efforts of academic institutions, industry and regulatory agencies around the world.

The Sarawak Biodiversity Centre was a co-organiser of the meeting. During CGCM, SBC hosted two different excursion tours for all CGCM participants. The excursion tours were held at SBC's premises and Kampung Semadang.

During the tour at SBC, participants were briefed on SBC's roles and functions, experienced Traditional Borneo Herbal Steam and were introduced to the soon to be launched "Therapeutic Foot Spray". While at Kampung Semadang, participants were briefed on the Traditional Knowledge (TK) Documentation Programme and Propagation of plants at Kampung Semadang by TK Community.

Group photo of CGCM delegates at SBC.

Delegates were briefed on the plant propagation at Kampung Semadang.

Certificate of Achievement for three consecutive years without sick leave at SBC from 2016 to 2018

1. Ainley anak Tumis
2. Barbara anak Ngikoh@Nyikoh
3. Bee David anak Lamada
4. Bernardine Ida anak Joseph Jinam
5. Fesmuela anak Kagong
6. Gilbert Lau Sei Kung
7. Hafizah Binti Booty
8. Lee Jong Jen
9. Margarita Naming
10. Mohamad Nasar Bin Pawi
11. Rosy anak Tian Lin
12. Sabda bin Safiee
13. Sunarjo bin Suip

Sijil Anugerah Perkhidmatan Cemerlang Tahun 2018 (APC)

1. Hii Mei Mei
2. Suria Binti Johari
3. Nuraqilah Binti Othman
4. Elaine Remi anak Douglas Telajan
5. Selwynn anak Jaoi Edward
6. Ellen Tan Chia Min
7. Sunarjo Bin Suip
8. Hanas anak Harry Ranip

Sijil Penghargaan Perkhidmatan Cemerlang Tahun 2018

1. Margarita Naming
2. Michele Mejin
3. Gilbert Lau Sei Kung
4. Wong Hie Ping
5. Tu Chu Lee
6. Dr Ng Lee Tze
7. Dr Noreha Binti Mahidi
8. Noor Pahtiwi Binti Bohari
9. Siti Muhaini Bt Haris Fadzillah
10. Holed anak Juboi
11. Harny anak Chapi
12. Bernardine Ida anak Jinam
13. Arlene Alicia anak Toaiang
14. Katrina Binti Aslan Joe
15. Ajuwin anak Lain
16. Mohd Fadeli Haironi Bin Jemat
17. Ng Yik Han
18. Keekoti Sue anak Betin
19. Jamilah Bt Hassan
20. Clare Heinzie anak Juhin
21. Arzie Binti Ramli
22. Anna Ng Mei Na
23. Mohamad Nasar Bin Pawi
24. Chew Leh King
25. Rosy anak Tian Lin
26. Sylvia Jennifer anak James
27. Lucy Noraini Mitis
28. Elsa Isla Jong
29. Asma Saiyidatina Aishah Binti Abdul Rahman
30. Elizabeth Alice anak Gabriel Nasib
31. Fazariah Kipali
32. Frankie anak Kumbak
33. Gabriel Chang
34. Tora anak Ranggon
35. Hugh anak Doyos
36. Joeng anak Melos
37. Freddie anak Ambrose Ambol
38. Eskandar Bin Ibrahim
39. Annie Anthoney Empra
40. Alan Ringah
41. Bernard anak Jerome

Records of Sarawak Biodiversity Council, SBC Establishment Committee, SBC Finance & Investment Committee and SBC Audit Committee Meeting 2018

No	Type of Meeting	Frequency
1	Sarawak Biodiversity Council	4
2	SBC Establishment Committee	3
3	SBC Finance & Investment Committee	4
4	SBC Audit Committee Meeting	4

SBC Audit Committee 2018

YBhg Datu Laura Lee Ngien Hion
Deputy State Financial Secretary
Chairman, SBC Audit Committee

Dr Alvin Chai Lian Kuet
Acting Director of Agriculture
Member, SBC Audit Committee

Mr Peter Sawal
Controller, Natural Resources & Environment Board (NREB)
Member, SBC Audit Committee

Mr John Kennedy Janang
Principal Assistant Secretary
State Financial Secretary's Office
Member, SBC Audit Committee

Ms Christina Wong Hie Ping
Accountant, Sarawak Biodiversity Centre
Secretary, SBC Audit Committee

SBC Establishment Committee 2018

YBhg Datu Haji Mohamad Abu Bakar Bin Marzuki
Deputy State Secretary [Socio-Economic Transformation]
Chairman, SBC Establishment Committee

YBhg Datu Dr Haji Wan Lizozman Bin Wan Omar
Permanent Secretary
Ministry of Urban Development and Natural Resources (MUDeNR)
Deputy Chairman, SBC Establishment Committee

Dr Alvin Chai Lian Kuet
Acting Director of Agriculture
Member, SBC Establishment Committee

YBhg Datu William Nyigor
Director
Chief Minister's Department (State Human Resource Unit)
Member, SBC Establishment Committee

Dr Yeo Tiong Chia
Chief Executive Officer
Sarawak Biodiversity Centre
Secretary, SBC Establishment Committee

SBC Finance and Investment Committee 2018

YBhg Dato Sri Ahmad Tarmizi Bin Haji Sulaiman
State Financial Secretary
Chairman, SBC Finance and Investment Committee

YBhg Datu Haji Sudarsono Osman
Permanent Secretary
Ministry of Education, Science and Technological Research (MESTR)
Member, SBC Finance and Investment Committee

Mr Hamden Bin Haji Mohammad
Director of Forests / Controller of Wildlife
Member, SBC Finance and Investment Committee

Dr Alvin Chai Lian Kuet
Acting Director of Agriculture
Member, SBC Finance and Investment Committee

Dr Yeo Tiong Chia
Chief Executive Officer
Sarawak Biodiversity Centre
Secretary, SBC Finance and Investment Committee

Financial Statement for the Year Ended 2018

CONTENTS

SARAWAK BIODIVERSITY COUNCIL
(Incorporated under The Sarawak Biodiversity Centre Ordinance 1997
Chapter 24, Laws of Sarawak)

COUNCIL MEMBERS

Chairman	:	YBhg Tan Sri Datuk Amar Wilson Baya Dandot
Deputy Chairman	:	Permanent Secretary, Ministry of Education, Science and Technological Research YBhg Datu Haji Sudarsono bin Osman (ceased 31 December 2018)
		YBhg Datu William Patrick Nyigor (appointed 2 January 2019)
Secretary	:	Chief Executive Officer, Sarawak Biodiversity Centre Dr Yeo Tiong Chia
Council Members	:	State Attorney General, Sarawak Yang Arif Datuk Talat Mahmood Bin Abdul Rashid
	:	State Financial Secretary, Sarawak YBhg Dato Sri Ahmad Tarmizi Bin Haji Sulaiman
	:	Permanent Secretary, Ministry of Urban Development and Natural Resources YBhg Datu Dr Haji Wan Lizozman Bin Wan Omar
	:	Deputy State Secretary (SET), Sarawak YBhg Datu Haji Mohamad Abu Bakar Bin Marzuki
	:	Acting Director, Department of Agriculture, Sarawak Dr Alvin Chai Lian Kuet
	:	Director, Department of Forest, Sarawak Encik Hamden Bin Mohammad
	:	Controller, Natural Resources and Environment Board Encik Peter Sawal (ceased 31 December 2018)
		Acting Controller, Natural Resources and Environment Board Encik Justine Jok Jau Emang (appointed 2 January 2019)

SARAWAK BIODIVERSITY COUNCIL
(Incorporated under The Sarawak Biodiversity Centre Ordinance 1997
Chapter 24, Laws of Sarawak)

OFFICER AND PROFESSIONAL ADVISORS

Chief Executive Officer	: Dr Yeo Tiong Chia
Registered office	: Lot 724 Block 3, Sentah-Segu Land District KM 20 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 Jalan Kulas 93400 Kuching Sarawak
	: Public Bank Berhad 384-388, Sentosa Central, Batu 7 Jln Penrissen 93250 Kuching Sarawak

SARAWAK BIODIVERSITY COUNCIL
(Incorporated under The Sarawak Biodiversity Centre Ordinance 1997
Chapter 24, Laws of Sarawak)

PENYATA PENGERUSI DAN TIMBALAN PENGERUSI

Kami, **YBHG TAN SRI DATUK AMAR WILSON BAYA DANDOT** dan **YBHG DATU WILLIAM PATRICK NYIGOR** 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 2018** dan hasil kendaliannya serta perubahan kedudukan kewangannya bagi tahun yang berakhir pada tarikh tersebut.

Bagi pihak Majlis,

.....
YBHG TAN SRI DATUK AMAR WILSON BAYA DANDOT

Tarikh: 29.4.2019

Kuching

Bagi pihak Majlis,

.....
YBHG DATU WILLIAM PATRICK NYIGOR

Tarikh: 29.4.2019

Kuching

SARAWAK BIODIVERSITY COUNCIL
(Incorporated under The Sarawak Biodiversity Centre Ordinance 1997
Chapter 24, Laws of Sarawak)

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, mengikut sebaik-baik pengetahuan dan kepercayaan 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 ..26... haribulan..4..2019..)

.....

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

Di hadapan saya

SECOND CLASS MAGISTRATE ★ SARAWAK ★ KUCHING ★

.....

MAGISTRATE

SURAIJAH BINTI ZAINOL
2nd Class Magistrate
Kuching District Office
State Of Sarawak

LAPORAN KETUA AUDIT NEGARA
MENGENAI PENYATA KEWANGAN
MAJLIS KEPELBAGAIAN BIOLOGI SARAWAK
BAGI TAHUN BERAKHIR 31 DISEMBER 2018

Laporan Mengenai Penyata Kewangan

Pendapat

Penyata Kewangan Majlis Kepelbagaian Biologi Sarawak telah diaudit oleh wakil saya yang merangkumi Penyata Kedudukan Kewangan Pada 31 Disember 2018 dan Penyata Pendapatan Komprehensif, Penyata Perubahan Ekuiti serta Penyata Aliran Tunai bagi tahun berakhir pada tarikh tersebut, ringkasan polisi perakaunan yang signifikan dan nota kepada penyata kewangan seperti dinyatakan pada muka surat 9 hingga 27.

Pada pendapat saya, penyata kewangan ini memberikan gambaran yang benar dan saksama mengenai kedudukan kewangan Majlis Kepelbagaian Biologi Sarawak pada 31 Disember 2018 dan prestasi kewangan serta aliran tunai bagi tahun berakhir pada tarikh tersebut selaras dengan piawaian pelaporan kewangan yang diluluskan di Malaysia dan *The Statutory Bodies (Financial and Accounting Procedure) Ordinance*, 1995 serta *The Sarawak Biodiversity Centre Ordinance*, 1997.

Asas Kepada Pendapat

Saya telah melaksanakan pengauditan berdasarkan Akta Audit 1957 dan *The International Standards of Supreme Audit Institutions*. Tanggungjawab saya dihuraikan selanjutnya di perenggan Tanggungjawab Juruaudit Terhadap Pengauditan Penyata Kewangan dalam laporan 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 Kepelbagaian Biologi Sarawak dan telah memenuhi tanggungjawab etika lain berdasarkan *The International Standards of Supreme Audit Institutions.*

Maklumat Lain Selain Daripada Penyata Kewangan dan Laporan Juruaudit Mengenainya

Ahli Majlis, 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 Laporan Juruaudit mengenainya dan saya tidak menyatakan sebarang bentuk kesimpulan jaminan mengenainya.

Tanggungjawab Ahli Majlis Terhadap Penyata Kewangan

Ahli Majlis bertanggungjawab terhadap penyediaan penyata kewangan Majlis Kepelbagaian Biologi Sarawak yang memberi gambaran benar dan saksama selaras dengan piawaian pelaporan kewangan yang diluluskan di Malaysia dan *The Statutory Bodies (Financial and Accounting Procedure) Ordinance*, 1995 serta *The Sarawak Biodiversity Centre Ordinance*, 1997. Ahli Majlis juga bertanggungjawab terhadap penetapan kawalan dalaman yang perlu bagi membolehkan penyediaan penyata kewangan Majlis Kepelbagaian Biologi Sarawak adalah bebas daripada salah nyata yang ketara sama ada disebabkan fraud atau kesilapan.

Semasa penyediaan penyata kewangan Majlis Kepelbagaian Biologi Sarawak, Ahli Majlis 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 Laporan Juruaudit yang merangkumi pendapat saya. Jaminan yang munasabah adalah satu tahap jaminan yang tinggi, tetapi bukan satu jaminan bahawa audit yang dijalankan mengikut *The 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 *The International Standards of Supreme Audit Institutions*, saya menggunakan pertimbangan profesional dan mengekalkan keraguan profesional sepanjang pengauditan. Saya juga:

a. Mengenal pasti dan menilai risiko salah nyata ketara dalam penyata kewangan Majlis Kepelbagaian 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 Kepelbagaian Biologi Sarawak.

c. Menilai kesesuaian dasar perakaunan yang diguna pakai, kemunasabahan anggaran perakaunan dan pendedahan yang berkaitan oleh Ahli Majlis.

d. Membuat kesimpulan terhadap kesesuaian penggunaan asas perakaunan untuk usaha berterusan oleh Ahli Majlis 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 Kepelbagaian Biologi Sarawak sebagai satu usaha berterusan. Jika saya membuat kesimpulan bahawa ketidakpastian ketara wujud, saya perlu melaporkan dalam Laporan Juruaudit terhadap pendedahan yang berkaitan dalam penyata kewangan Majlis Kepelbagaian Biologi Sarawak atau, jika pendedahan tersebut tidak mencukupi, pendapat saya akan diubah. Kesimpulan saya dibuat berdasarkan bukti audit yang diperoleh sehingga tarikh Laporan Juruaudit.

e. Menilai sama ada keseluruhan persembahan termasuk pendedahan penyata kewangan Majlis Kepelbagaian Biologi Sarawak memberi gambaran yang saksama.

Saya telah berkomunikasi dengan Ahli Majlis, antaranya mengenai skop dan tempoh pengauditan yang dirancang serta penemuan audit yang signifikan termasuk kelemahan kawalan dalaman yang dikenal pasti semasa pengauditan.

Laporan Mengenai Keperluan Perundangan dan Peraturan Lain

Berdasarkan keperluan *The Statutory Bodies (Financial and Accounting Procedure) Ordinance*, 1995 dan *The Sarawak Biodiversity Centre Ordinance*, 1997, saya juga melaporkan bahawa pada pendapat saya, rekod perakaunan dan rekod lain yang dikehendaki Ordinan untuk disimpan oleh Majlis Kepelbagaian Biologi Sarawak telah disimpan dengan sempurna menurut peruntukan Ordinan.

Hal-hal Lain

Laporan ini dibuat untuk Ahli Majlis dan bukan untuk tujuan lain. Saya tidak bertanggungjawab terhadap pihak lain bagi kandungan laporan ini.

(TOIEYAH BINTI HAJI TIOH)
b.p. KETUA AUDIT NEGARA
MALAYSIA

KUCHING
TARIKH : 8 JUL 2019

SARAWAK BIODIVERSITY COUNCIL
(Incorporated under The Sarawak Biodiversity Centre Ordinance 1997
Chapter 24, Laws of Sarawak)

STATEMENT OF FINANCIAL POSITION
AS AT 31 DECEMBER 2018

	Note	2018 RM	2017 RM
NON-CURRENT ASSETS			
Property, plant and equipment	4	21,036,080	20,659,731
CURRENT ASSETS			
Cash and cash equivalents		1,594,800	8,516,798
Fixed deposits	5	24,000,000	22,523,573
Trade and other receivables	6	917,817	489,966
Total current assets		26,512,617	31,530,337
TOTAL ASSETS		**47,548,697**	**52,190,068**
EQUITY			
General reserve	7	37,959,007	37,561,452
NON-CURRENT LIABILITIES			
Provision for retirement benefits	8	80,321	-
CURRENT LIABILITIES			
Development funds	9	9,264,072	13,830,212
Other payables and accruals	10	222,366	788,871
Provision for retirement benefits	8	8,914	-
Provision for taxation	11	14,017	9,533
Total current liabilities		9,509,369	14,628,616
TOTAL LIABILITIES		9,589,690	14,628,616
TOTAL EQUITY AND LIABILITIES		**47,548,697**	**52,190,068**

The accompanying notes on pages 13 to 27 form an integral part of the financial statements.

STATEMENT OF COMPREHENSIVE INCOME
FOR THE FINANCIAL YEAR ENDED 31 DECEMBER 2018

	Note	2018 RM	2017 RM
Revenue	12	3,507,022	945,696
Government grant	13	9,253,438	6,689,609
		12,760,459	7,635,305
Staff cost	14	(7,540,017)	(6,924,068)
Depreciation of property, plant and equipment	4	(2,946,585)	(2,661,826)
Other operating expenses	15	(1,648,478)	(1,333,629)
Surplus/(Deficit) before tax		625,380	(3,284,218)
Tax Expense	11	(227,825)	(203,520)
Surplus/(Deficit) for the financial year		397,555	(3,487,738)

The accompanying notes on pages 13 to 27 form an integral part of the financial statements.

SARAWAK BIODIVERSITY COUNCIL
(Incorporated under The Sarawak Biodiversity Centre Ordinance 1997
Chapter 24, Laws of Sarawak)

STATEMENT OF CHANGES IN EQUITY
FOR THE FINANCIAL YEAR ENDED 31 DECEMBER 2018

	General Reserve RM
Balance as at 1 January 2017	41,049,190
Deficit for the financial year	(3,487,738)
Balance as at 31 December 2017	**37,561,452**
Surplus for the financial year	397,555
Balance as at 31 December 2018	**37,959,007**

The accompanying notes on pages 13 to 27 form an integral part of the financial statements.

SARAWAK BIODIVERSITY COUNCIL
(Incorporated under The Sarawak Biodiversity Centre Ordinance 1997
Chapter 24, Laws of Sarawak)

STATEMENT OF CASH FLOWS
FOR THE FINANCIAL YEAR ENDED 31 DECEMBER 2018

	Note	2018 RM	2017 RM
CASH FLOW FROM OPERATING ACTIVITIES			
Surplus/(Deficit) before tax		625,380	(3,284,218)
Adjustments for the items not involving the movements of cash and cash equivalents			
Development grant		(3,253,438)	(1,689,609)
Development fund		(2,383,364)	-
Depreciation of property, plant and equipment	4	2,946,585	2,661,826
Interest income		(949,270)	(848,002)
Provision for retirement benefits		89,235	-
Gain on disposal of property, plant and equipment		(27,758)	-
Property, plant and equipment written-off		127,110	-
Operating deficit before working capital changes		(2,825,520)	(3,160,004)
Increase in trade and other receivables		(427,851)	(70,059)
(Decrease) / Increase in other payables		(566,505)	254,840
Cash used in operation		(3,819,876)	(2,975,222)
Income tax paid		(226,060)	(216,218)
Income tax refunded		2,719	-
Net cash used in operating activities		(4,043,217)	(3,191,440)
CASH FLOW FROM INVESTING ACTIVITIES			
Purchase of property, plant and equipment	16	(196,608)	(488,701)
Proceed from disposal of property, plant and equipment		27,760	-
Development grant received		4,928,957	9,285,834
Development expenditure		(7,111,733)	(5,125,376)
Interest received		949,270	848,002
Net cash (used in) / generated from investing activities		(1,402,354)	4,519,759
Net (decrease) / increase in cash and cash equivalents		**(5,445,571)**	**1,328,318**
Cash and cash equivalents at beginning of the year		31,040,371	29,712,052
Cash and cash equivalents at end of the year		**25,594,800**	**31,040,371**
Cash and cash equivalent consist of:-			
Cash and cash at bank		1,594,800	8,516,798
Fixed deposits	5	24,000,000	22,523,573
		25,594,800	**31,040,371**

The accompanying notes on pages 13 to 27 form an integral part of the financial statements.

SARAWAK BIODIVERSITY COUNCIL
(Incorporated under The Sarawak Biodiversity Centre Ordinance 1997
Chapter 24, Laws of Sarawak)

NOTES TO THE FINANCIAL STATEMENTS FOR THE FINANCIAL YEAR ENDED 31 DECEMBER 2018

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, KM 20 Jalan Borneo Heights, Semengoh, Locked Bag No. 3032, 93990 Kuching, Sarawak.

The Council 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 extracts for R&D;
- implement the Traditional Knowledge Documentation Programme among the traditional communities in the State;
- provides 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").

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 2018

2. SIGNIFICANT ACCOUNTING POLICIES (CONT'D)

(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: -

• Buildings	5% p.a.
• Office equipment	15% p.a.
• Furniture, fixture and fittings	10% p.a.
• Computers and accessories	20% p.a.
• Office renovation	10% 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% 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.

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

(c) Operating grant

Grant received from the State Government for the operation or maintenance of the Council's activities and is credited statement of comprehensive income.

Grants that compensate the Council for operating expenses incurred are recognised as income over the periods necessary to match the grant on a systematic basis to the costs that it is intended to compensate.

NOTES TO THE FINANCIAL STATEMENTS
FOR THE FINANCIAL YEAR ENDED 31 DECEMBER 2018

2. SIGNIFICANT ACCOUNTING POLICIES (CONT'D)

(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 so received are credited to the Development Grants and offset against future costs when incurred.

Government grants that do not impose specified future performance conditions are measured at the fair value of the assets received or receivable and recognised in income when the grant proceeds are receivable.

Government grants that impose specified future performance conditions are recognised at their fair value in income only when the performance conditions are met.

Government grants received before the revenue recognition criteria are satisfied are recognised as a liability.

(e) Impairment of assets

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 an asset exceeds its 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 or as a revaluation increase.

NOTES TO THE FINANCIAL STATEMENTS
FOR THE FINANCIAL YEAR ENDED 31 DECEMBER 2018

2. SIGNIFICANT ACCOUNTING POLICIES (CONT'D)

(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, such as paid annual leave are recognised when services rendered by employees that increases 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-terms 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 current basic salary at a discount factor of 3.3% had been applied for the calculation of the liability.

(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 they relate. 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 anticipated realisable value. 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.

NOTES TO THE FINANCIAL STATEMENTS
FOR THE FINANCIAL YEAR ENDED 31 DECEMBER 2018

2. SIGNIFICANT ACCOUNTING POLICIES (CONT'D)

(g) Financial assets and liabilities (cont'd)

(ii) Other payables

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

(h) Revenue recognition

Revenue 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.

- Interest revenue is recognised 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 comprised deferred direct project costs and related overheads incurred for projects ranging from 2 to 30 years. These research and development expenditures are recognised as expenses when the research and development are completed.

(j) Cash and cash equivalents

Cash and cash equivalents in the statement of cash flows comprise cash and bank balances, short-term bank deposits with original maturity periods of twelve (12) months or less and other short-term, highly liquid investments which are readily convertible to cash and which are subjected to an insignificant risk of changes in value.

(k) 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.

NOTES TO THE FINANCIAL STATEMENTS
FOR THE FINANCIAL YEAR ENDED 31 DECEMBER 2018

3. CRITICAL ACCOUNTING JUDGEMENTS AND KEY SOURCES OF ESTIMATION UNCERTAINTY

(a) Critical judgments in applying the accounting policies

The judgments, apart from those involving estimations described below, that the management has made in the process of applying the accounting policies and that have the most significant effect on the amounts recognised in the financial statements are as follows:

(i) Fair value of financial assets and liabilities

The fair value for certain other financial assets and financial liabilities are obtained from the quoted price in an active market, if quoted prices are unavailable, the price of a recent transaction for an identical financial assets or liabilities provides evidence of fair value as long as there has not been a significant change in economic circumstances or a significant lapse of the time since the transaction took place.

(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, other 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 including property, plant and equipment 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.

NOTES TO THE FINANCIAL STATEMENTS
FOR THE FINANCIAL YEAR ENDED 31 DECEMBER 2018

3. CRITICAL ACCOUNTING JUDGEMENTS AND KEY SOURCES OF ESTIMATION UNCERTAINTY (CONT'D)

(b) Key sources of estimation uncertainty (cont'd)

(ii) Impairment loss of property, plant and equipment (cont'd)

The recoverable amount of an asset is the greater of its fair value less costs to sell and value in use. In assessing value in use, the estimated future cash flows are discounted to their present value 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-terms 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 current basic salary at a discount factor of 3.3% had been applied for the calculation of the provision.

NOTES TO THE FINANCIAL STATEMENTS
FOR THE FINANCIAL YEAR ENDED 31 DECEMBER 2018

4. Property, plant and equipment

2018	Buildings 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 2018	16,278,159	1,057,803	1,047,736	2,188,907	584,209	994,153	109,780	372,473	94,068	16,930,987	648,170	40,306,445
Additions	923,922	2,000	1,887	6,669	-	186,052	-	-	-	2,256,196	73,320	3,450,046
Disposal	-	-	-	-	-	(186,417)	-	-	-	-	-	(186,417)
Write-off	-	(44,900)	-	-	-	-	-	-	-	(105,309)	-	(150,209)
At 31 December 2018	17,202,081	1,014,903	1,049,623	2,195,576	584,209	993,788	109,780	372,473	94,068	19,081,874	721,490	43,419,865
Accumulated Depreciation												
At 1 January 2018	4,632,005	641,297	457,360	1,201,676	514,318	707,575	109,743	372,472	70,555	10,315,044	624,669	19,646,714
Charge	812,082	83,537	88,648	219,102	13,559	111,706	-	-	8,407	1,596,537	13,007	2,946,585
Disposal	-	-	-	-	-	(186,415)	-	-	-	-	-	(186,415)
Write-off	-	(8,419)	-	-	-	-	-	-	-	(14,680)	-	(23,099)
At 31 December 2018	5,444,087	716,415	546,008	1,420,778	527,877	632,866	109,743	372,472	78,962	11,896,901	637,676	22,383,785
Carrying amounts	**11,757,994**	**298,488**	**503,615**	**774,798**	**56,332**	**360,922**	**37**	**1**	**15,106**	**7,184,973**	**83,814**	**21,036,080**

SARAWAK BIODIVERSITY COUNCIL
(Incorporated under The Sarawak Biodiversity Centre Ordinance 1997
Chapter 24, Laws of Sarawak)

NOTES TO THE FINANCIAL STATEMENTS FOR THE FINANCIAL YEAR ENDED 31 DECEMBER 2018

4. Property, plant and equipment (cont'd)

2017	Buildings	Office equipment	Furniture, fixtures and fittings	Computers and accessories	Office renovations	Motor vehicles	Specialised equipment	Temporary office	Nursery sheds	Lab specialised equipment	Lab furniture and fittings	Total
	RM	RM	RM	RM	RM	RM	RM	RM	RM	RM	RM	RM
Cost												
At 1 January 2017	16,087,637	865,143	1,043,436	2,148,483	584,209	914,153	109,780	372,473	94,068	15,264,354	644,400	38,128,136
Additions	190,522	192,660	4,300	40,424	-	80,000	-	-	-	1,666,633	3,770	2,178,309
At 31 December 2017	16,278,159	1,057,803	1,047,736	2,188,907	584,209	994,153	109,780	372,473	94,068	16,930,987	648,170	40,306,445
Accumulated Depreciation												
At 1 January 2017	3,818,097	565,757	368,857	980,032	469,002	608,310	109,743	372,472	62,148	9,009,251	621,219	16,984,888
Charge	813,908	75,540	88,503	221,644	45,316	99,265	-	-	8,407	1,305,793	3,450	2,661,826
At 31 December 2017	4,632,005	641,297	457,360	1,201,676	514,318	707,575	109,743	372,472	70,555	10,315,044	624,669	19,646,714
Carrying amounts	**11,646,154**	**416,506**	**590,376**	**987,231**	**69,891**	**286,578**	**37**	**1**	**23,513**	**6,615,943**	**23,501**	**20,659,731**

NOTES TO THE FINANCIAL STATEMENTS
FOR THE FINANCIAL YEAR ENDED 31 DECEMBER 2018

5. Fixed deposits

Fixed deposits with licensed banks of the Council at the end of the reporting period and having maturity periods of twelve (12) months bore effective interest rates ranging from 4.05% to 4.10% (2017: 3.15%).

6. Trade and other receivables

	2018 RM	2017 RM
Trade receivables	14,833	1,070
Other receivables	220,675	14,364
Interest receivables	682,309	474,532
	917,817	489,966

7. General reserve

	2018 RM	2017 RM
Balance as at 1 January	37,561,452	41,049,190
Surplus/(Deficit) for the financial year	397,555	(3,487,738)
Balance as at 31 December	37,959,007	37,561,452

8. Provision for retirement benefits

	2018 RM	2017 RM
Balance as at 1 January	-	-
Provision for retirement benefits during the year	89,235	-
Balance as at 31 December	89,235	-

	2018 RM	2017 RM
Current provision for retirement benefits	8,914	-
Non-current provision for retirement benefits	80,321	-
	89,235	-

NOTES TO THE FINANCIAL STATEMENTS
FOR THE FINANCIAL YEAR ENDED 31 DECEMBER 2018

9. Development funds

	2018	2017
	RM	RM
Balance as at 1 January	13,830,212	9,800,140
Received during the year	4,928,957	9,285,834
Expended during the year	(7,111,733)	(5,255,762)
Recognised as income	(2,383,364)	-
Balance as at 31 December	9,264,072	13,830,212

Development funds comprise of grants received from the Sarawak Government and collaborators for the purpose of research and development.

10. Other payables and accruals

	2018	2017
	RM	RM
Other payables	190,602	532,278
Accruals	31,764	256,593
	222,366	788,871

11. Provision for taxation/Taxation

In exercising the powers under Section 127(3)(b) of Income Tax Act 1967, YB Menteri Kewangan Malaysia had 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 had 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.

NOTES TO THE FINANCIAL STATEMENTS
FOR THE FINANCIAL YEAR ENDED 31 DECEMBER 2018

11. Provision for taxation/Taxation (cont'd)

	2018 RM	2017 RM
Balance at 1 January	9,533	31,964
Current year provision	227,825	203,520
Tax paid	(226,060)	(216,218)
Tax refunded	2,719	-
Over provision in prior years	-	(9,733)
Balance at 31 December	14,017	9,533

Taxation

	2018 RM	2017 RM
Current year tax expense	227,825	203,520
Tax paid for current year	(208,664)	(191,268)
Tax payable	19,161	12,252

12. Revenue

	2018 RM	2017 RM
Fixed deposit interest income	949,270	848,002
Development fund	2,383,364	-
Tender document fees	5,850	5,850
Gain on disposal of property, plant and equipment	27,758	-
Sales of products	88,492	56,016
Other income	52,288	35,828
	3,507,022	945,696

NOTES TO THE FINANCIAL STATEMENTS
FOR THE FINANCIAL YEAR ENDED 31 DECEMBER 2018

13. Government grants

	2018 RM	2017 RM
Operating grant	6,000,000	5,000,000
Development grant	3,253,438	1,689,609
	9,253,438	6,689,609

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

14. Staff cost

	2018 RM	2017 RM
Personnel emolument	6,011,331	5,589,901
Provision for retirement benefits	89,235	-
Staff incentives	144,868	133,014
EPF	760,939	700,760
SOCSO	71,233	69,978
Overtime	85,583	75,013
Transport and travelling	242,235	177,348
Medical expenses	111,032	131,393
Staff uniform	23,561	46,661
	7,540,017	6,924,068
Number of staff	97	97

NOTES TO THE FINANCIAL STATEMENTS
FOR THE FINANCIAL YEAR ENDED 31 DECEMBER 2018

15. Other operating expenses

	2018	2017
	RM	RM
Advertisement	32,004	6,764
Audit fees	7,650	7,606
Bank charges	2,067	2,008
Computer and accessories	86,284	121,936
Consultancy fees	25,610	45,545
Conference and seminar fees	30,120	-
Council Members' allowance and sitting fees	131,500	85,400
Electricity charges	316,673	256,628
Entertainment	58,766	41,796
Fuel and lubricant	20,904	14,260
Human resource development expenses	132,992	49,583
Lab consumables	72,355	112,915
Lab maintenance	12,195	74,018
Indigenous Knowledge Benefit Sharing	14,482	-
Insurance	59,353	54,807
Motor vehicles road tax	1,392	1,871
Newspapers and magazines	16,106	9,079
Office expenses	224,444	147,000
Office maintenance	191,597	202,704
Postage and courier	12,641	10,840
Property, plant and equipment written-off	127,110	-
Printing and stationery	18,979	18,225
Repairs and maintenance - motor vehicles	14,406	22,799
Telecommunication and internet charges	29,401	42,376
Unclaimable good and services tax (GST)	298	-
Water charges	9,149	5,469
	1,648,478	1,333,629

NOTES TO THE FINANCIAL STATEMENTS
FOR THE FINANCIAL YEAR ENDED 31 DECEMBER 2018

16. Purchase of property, plant and equipment

	2018	2017
	RM	RM
Purchase of property, plant and equipment	3,450,046	2,178,309
Financed by development grant	(3,253,438)	(1,689,608)
Cash payment on property, plant and equipment	196,608	488,701

17. Capital commitments

Approved capital expenditure and contracted for in the financial statements as at 31 December 2018 is RM1.08 million (2017: RM1.04 million).

18. Authorisation for issue of the financial statements

The financial statements of the Sarawak Biodiversity Council (Council) were authorised for issue by the Council Members during the meeting held on 26 April 2019.

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