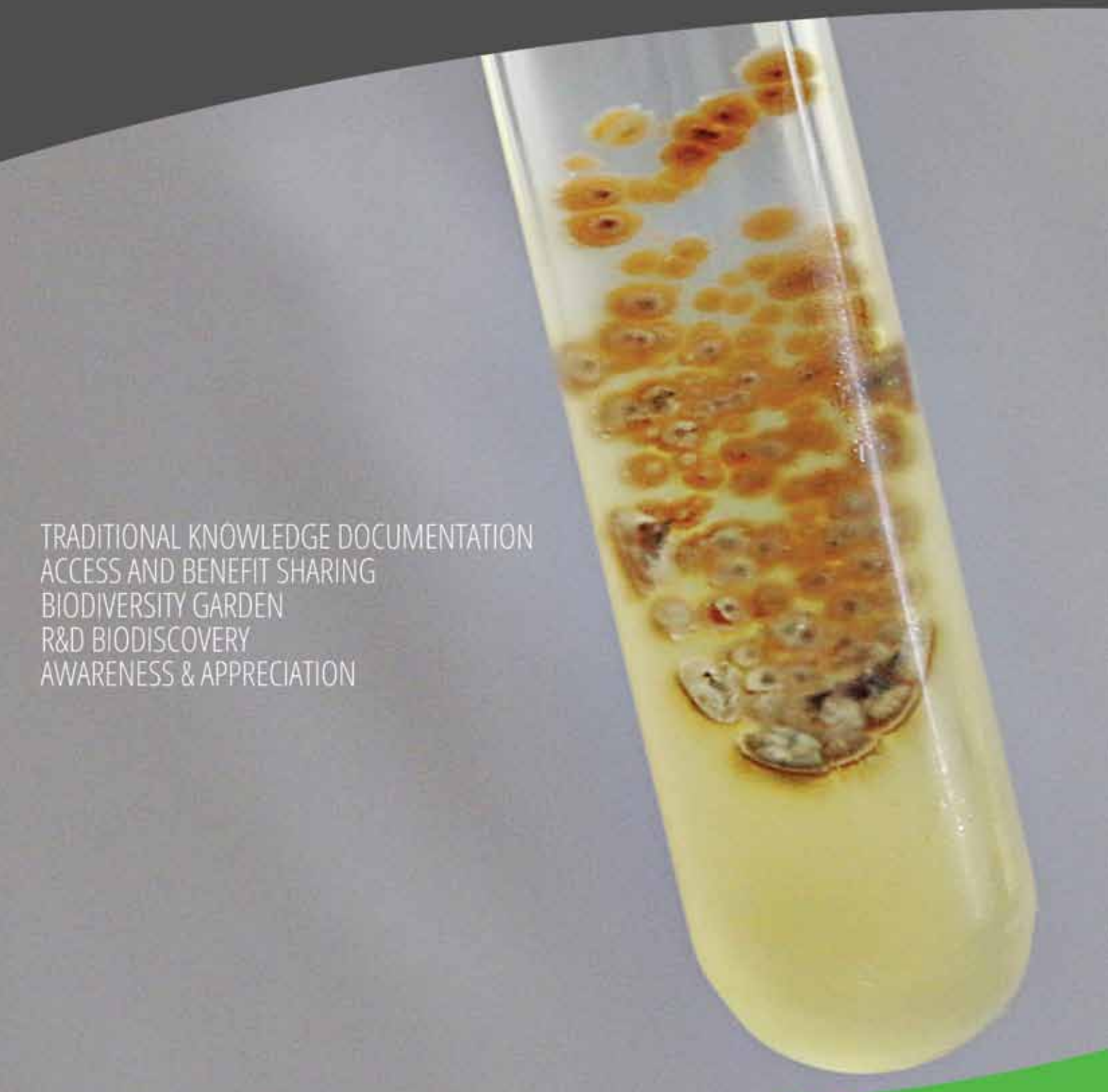
SARAWAK BIODIVERSITY CENTRE
ANNUAL REPORT



TRADITIONAL KNOWLEDGE DOCUMENTATION
ACCESS AND BENEFIT SHARING
BIODIVERSITY GARDEN
R&D BIODISCOVERY
AWARENESS & APPRECIATION

Sarawak
Biodiversity Centre

2016

Cover Photo: *Microtetraspora,* genus of filamentous bacteria belonging to the family Streptomycetaceae.

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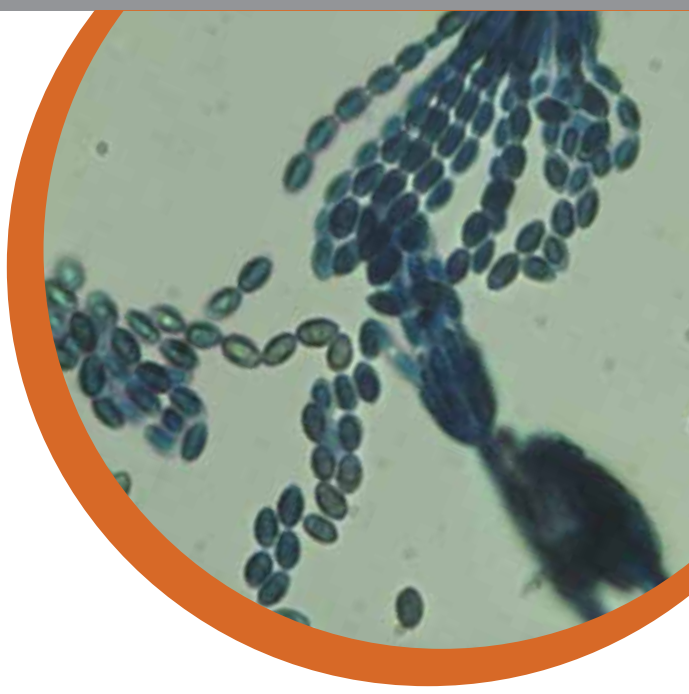


Vision

Enriching Lives with
Breakthrough Innovations in
Biodiversity

Mission

To Decode Biodiversity for
the Benefit of Mankind

Tagline

Biodiversity for a Better Tomorrow

Foreword from the Chairman of Sarawak Biodiversity Council

The Year 2016 signified many things to come for the Sarawak Biodiversity Centre (SBC). The launch of the LitSara® brand by the Right Honourable Chief Minister on 13th July 2016, marks the beginning of product commercialisation, from the Centre's R&D.

In addition, commercialisation of LitSara® is modeled on Access and Benefit Sharing (ABS), where a value chain is created from the Traditional Knowledge of our indigenous communities to the production of bio-based products.

The official opening of the Centre's Integrated Biodiscovery Research Building (IBRB) meanwhile, equips SBC to move farther ahead in the R&D, in order to bring research to a level where findings are developed and put to use for the benefit of all.

The following years see a lot of challenges to the Centre, as it sets a benchmark for itself as the leading research agency in the country that implemented ABS on the use of the State's biological resources, and communities' traditional knowledge under the SBC Ordinance and Regulations.

As Chairman of the Sarawak Biodiversity Council, I look forward to many more solid key achievements from SBC, be it through partnerships with our indigenous communities, or multi-national companies that collaborate with us to explore and sustainably utilise Sarawak's biodiversity.

YB Tan Sri Datuk Amar Haji Mohamad Morshidi Bin Abdul Ghani
Chairman, Sarawak Biodiversity Council

Sarawak Biodiversity Council

YB Tan Sri Datuk Amar Haji Mohamad Morshidi Bin Abdul Ghani

State Secretary of Sarawak
Sarawak Biodiversity Council Chairman

YBhg Datu Sudarsono Osman

Permanent Secretary, Ministry of Resource Planning and Environment
Sarawak Biodiversity Council Deputy Chairman

Dr Yeo Tiong Chia

Chief Executive Officer, Sarawak Biodiversity Centre
Sarawak Biodiversity Council Secretary

YA Datu Haji Abdul Razak Tready

State Attorney General
Sarawak Biodiversity Council Member

YBhg Dato Sri Ahmad Tarmizi Bin Haji Sulaiman

State Financial Secretary
Sarawak Biodiversity Council Member

YBhg Datu Haji Misnu Bin Haji Taha

Deputy State Secretary (Administration, Security and Corporate Affairs)
Sarawak Biodiversity Council Member (until 16 June 2016)

YBhg Datu Haji Ismawi Bin Haji Ismuni

Deputy State Secretary (Socio-Economic Transformation)
Sarawak Biodiversity Council Member (w.e.f.30.09.2016)

YBhg Datu Lai Kui Fong

Director, Department of Agriculture, Sarawak
Sarawak Biodiversity Council Member

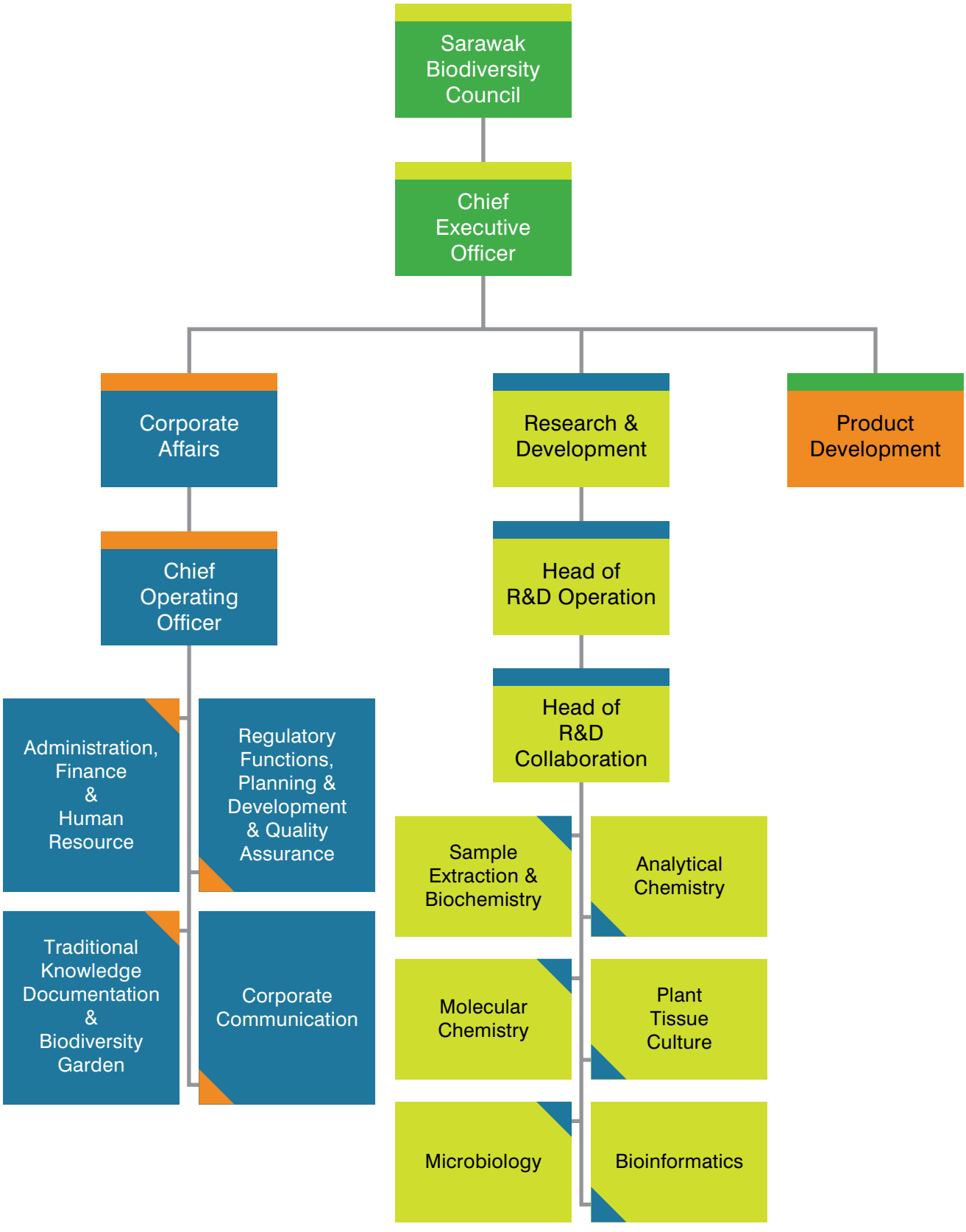
Tuan Haji Sapuan Ahmad

Director, Forest Department, Sarawak
Sarawak Biodiversity Council Member

Mr Peter Sawal

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

Organisation Structure



R&D Biodiscovery Programme

Discoveries of new species, chemicals and enzymes from Sarawak's biological resources for new applications in drug discovery, healthcare and the bio industries remain as the focus of SBC's Biodiscovery Programme.

In Year 2016, the construction of the Integrated Biodiversity Research Building was completed. It consists of the following new facilities:

- SBC's Gallery
- Research Officers' Workstations
- Analytical Chemistry Laboratory
- Plant Tissue Culture Laboratory
- Seminar Room
- Cold Rooms for SBC's Natural Products Library

The Objectives of SBC's R&D Programme are to:

- build up a unique library of natural products from Sarawak's biological resources;
- establish a pipeline of products and innovations for commercialization;
- develop the State's human resources in the field of biotechnology; and
- implement the Sarawak Biodiversity Centre Ordinance and its provisions for Access and Benefit Sharing (ABS), to ensure efficient research processes and equitable sharing of benefits arising from research, development and commercialization with Sarawak and the indigenous communities involved in SBC's Traditional Knowledge Documentation Programme.

The programme continued to document and enrich the information for SBC's Natural Product Library (NPL) with chemical profiling and bioactive compounds. The use of technologies and methodologies such as Laboratory Information Management System (LIMS) and Liquid chromatography-mass spectrometry (LCMS) for inventory and analyses have enabled rapid and systematic gathering of R&D data.

Natural Product Library

In Year 2016, 593 plant extracts and 3,036 microbe extracts were collected. The focus was on enriching the information of existing biological resources that have shown promising results in terms of bioactivities, and unique chemical profiling. Further research and scale up work in fermentation, and extraction of potential extracts for drug discovery is the next move, to leverage on the Natural Product Library (NPL) for product commercialization.

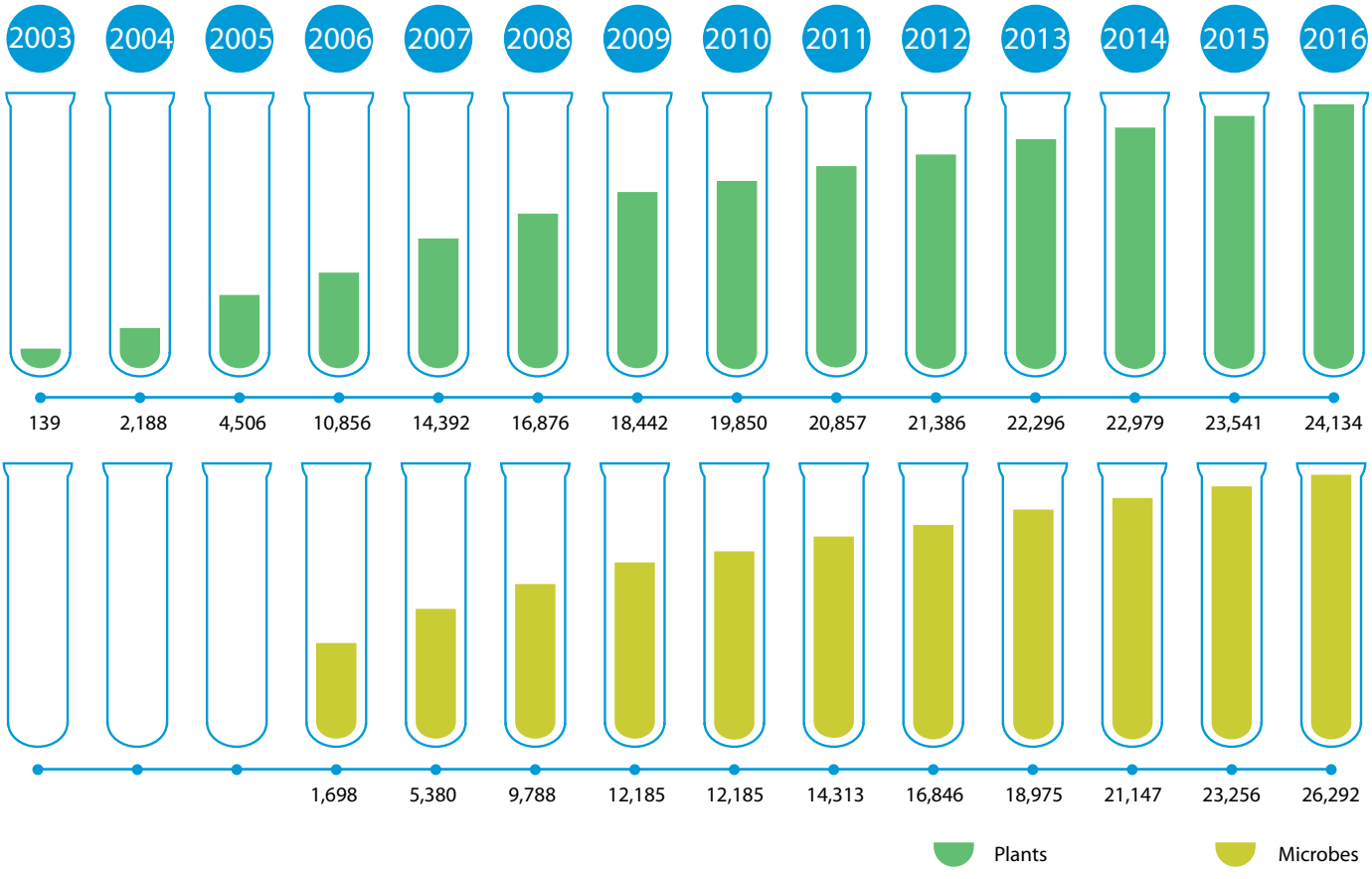


Table 1: The number of plants and microbes extracts in SBC's Natural Product Library

Sample Extraction

The preparation of plant samples collected from the field for extraction is based on standard operating procedures that have been established for the specific uses of these samples. These include analyses of essential oils, bioactivity and flavours. Each type of extract requires special attention and specific methods of storage to maintain the quality and integrity of its bioactive compounds.

In Year 2016, more than 1,000kg of plant samples were processed. With its current capacity and facilities, SBC is able to process the plant samples at a total of 200kg within a month, and is moving forward to improve the efficiency of processing bulk samples.

The plant extraction process is monitored through the Laboratory Information Management System (LIMS), and barcodes are generated from LIMS to act as security codes for the database.

Focus was also given to twelve plant species that were selected based on their potential as food flavouring agents under a collaboration. These twelve plants were fractionated and sent to the collaborator for screening.

The extraction team also successfully provided 150 extracts that were sent out for screening under various collaborations.

Analytical Chemistry

In Year 2016, a new Analytical Chemistry laboratory was established at SBC's Integrated Biodiversity Research Building (IBRB). With the new laboratory, SBC has increased its capacity to accommodate preparative scale purification work. This will enable quick turnaround time in acquiring compounds of interest.

The analytical chemistry laboratory is also equipped with Q-TOF Liquid Chromatography Mass Spectrometry (LCMS) which is essential in identification work for isolated compounds and screening for unknown compounds from SBC's library of natural products extracts.

Project on *Aglaia stellatopilosa*

Collaboration with Ohio State University under the Aglaia project has resulted in the publication of "Cyclopenta[b]benzofuran and secodammarane derivatives from the stems of *Aglaia stellatopilosa*" in the Journal of Natural Products (J. Nat. Prod., 2016, 79 (4), pp 784–791). The targeted secodammarane derivative isolated from *Aglaia stellatopilosa* has been found to have significant anti-microbial activity against *Staphylococcus aureus* and *Candida albicans*. These findings have led to further investigational studies on its potential uses.

Collaboration with SIgN on anti-malarial and anti-chikungunya

Collaboration with Singapore Immunology Network (SIgN) has resulted in the identification of four bioactive compounds' chemical structures for anti-chikungunya. One of the four active compound's chemical structure is being identified. Confirmation of the compound's structure will be done together with the Department of Pharmacy, National University of Singapore.

Collaboration with Kapit Department of Health

Studies were also carried out on *Plectocomiopsis geminiflora* (Upa lalih) and *Plectocomiopsis mira*, (Upa matar) to investigate the chemical differences between both species. Upa matar has been reported to be poisonous and easily mistaken for the edible Upa lalih. Principle component analysis (PCA) was used to analyse the LCMS data to determine the potential markers that contribute to the poison in Upa matar. Based on the analysis, four possible markers were observed. An information booklet was published in partnership with the Kapit Department of Health to educate the general public.

Microbiology

SBC's Microbial Natural Product Library (MNPL) consists of mainly of actinobacteria (12,128 strains) and fungi (7,568 strains). To date, SBC has identified some of the strains in the MNPL, i.e., 20% and 28% of the actinobacteria and fungi collection respectively. Actinobacteria consists of 22 families (54%) out of the 41 families published, and 51 (22%) out of the 227 genera published. Fungi consists of 96 (or 33%) families out of 290 families published and 245 (0.2%) genera out of 99,000 genera published.

In the Year 2016, SBC collected environmental samples for microbial isolation from three locations;

- Kuching - Asian pigeonwings/*(Clitoria ternatea)*, Kubah National Park
- Semarahan - Mangosteen (*Garcinia mangostana*) Orchard, Nypa Palm (*Nypa fruticans*) forest, *Litsea Garciae* (Engkalak) farm and
- Miri - Long Banga

The new genera isolated from these samples were *Actinospica, Actinomycetospora, Albifimbria, Biscogniauxia, Phialemonium, Pseudopestalotiopsis, Xenocylindrocladium, Dyella* and *Frateuria*.

A total of 2,950 strains (20 families and 51 genera) of actinobacteria have been identified to date. Under the fungi category, a total of 96 families and 245 genera have been identified from 2,089 strains.

The Microbiology laboratory's target to produce 3,000 microbial extracts in Year 2016, was achieved. A total of 1,625 actinobacteria and 1,411 fungal extracts have been deposited into SBC's Microbial Library. The number of extracts for actinomycetes and fungi accumulated from Year 2006 to Year 2016 are 15,980 and 10,312 respectively. Meanwhile, the total cumulative numbers of actinobacteria and fungi strains in the library for Year 2006 to Year 2016 have reached 12,634 and 7,568 respectively.

There were 2,758 extracts screened. Of these, 1,186 and 1,572 were actinobacteria and fungi extracts respectively. Of the 1,186 actinobacteria extracts screened, 42% were active against fungi *Aspergillus niger*, 7% were active against Gram positive bacteria *Staphylococcus aureus*, 3% were active against yeast *Candida albicans*, Gram negative bacteria *Escherichia coli* and *Klebsiella pneumoniae*, 2% were active against *Saccharomyces cerevisiae* and *Pseudomonas aeruginosa*. Of the 1,572 fungi extracts screened, 40% were active against fungi *Aspergillus niger*, 12% were active against Gram positive bacteria *Staphylococcus aureus*, 5% were active against yeast *Candida albicans* and Gram negative *Klebsiella pneumoniae*, 4% were active against Gram negative bacteria *Escherichia coli* and 1% were active against *Saccharomyces cerevisiae*. These information were used as a basis to further analysis isolate the active compounds with the hope to discover new antibiotics.

Chemical profiling using Ultra High Performance Liquid Chromatography (*μ*HPLC) was also carried out on microbial extracts from unique strains or those that have shown antimicrobial and anticancer activities. A total of four pure unknown compounds have been isolated, 12 compounds are being purified, with a remaining 42 compounds to be purified.

Seven selected strains (five actinobacteria and two fungi) were sent for whole genome sequencing to determine their secondary metabolite prediction.

Notes:
1. ***Aspergillus niger:*** A fungus that causes black mould on fruits and vegetables. It is also a common contaminant of food.
2. ***Staphylococus aurerus:*** Gram – positive bacteria and frequently found in the nose, respiratory tract, and on the skin.
3. ***Candida albicans:*** A yeast that can cause candidiasis infection in humans.
4. ***Escherichia coli:*** A Gram-negative bacteria that is commonly found in the lower intestine of warm-blooded organisms.
5. ***Klebsiella pneumoniae:*** A Gram-negative bacteria which commonly causes a range of illness including pneumonia, bloodstream infections and chest infection.
6. ***Pseudomonas aeruginosa:*** A common Gram-negative bacteria that can cause disease in plants, animals, and humans.

Molecular Biology

In Year 2016, the Molecular Biology team focused on plant compounds with anti-inflammatory activities. These compounds were screened for their immunomodulatory properties targeting the tumour necrosis factor-alpha (TNF-alpha).

TNF-alpha is one of the reported pro-inflammatory cytokines produced by activated macrophages during systemic inflammation. Elevated expression of TNF-alpha has been associated with a number of inflammatory diseases such as rheumatoid arthritis and atherosclerosis, and thus, it is an important therapeutic target for such diseases.

Compounds that inhibit TNF-alpha production in activated RAW264.7 (mouse macrophage) cells were further screened for modulation of an array of inflammatory cytokines using enzyme-linked immunosorbent assay (ELISA) platform. This assay uses Jurkat (human T-lymphocyte) cells.

The team is also working on establishing a protocol for fluorescent imaging to study cells treated with these compounds.

The Molecular Biology laboratory is fully equipped for anti-cancer, anti-proliferative, cytotoxic and immunoassays. There are six cell lines available in the laboratory, namely the NCI-H460 (lung cancer cells), MCF-7 (breast cancer cells), GM637 (SV40-transformed human fibroblast cells), HaCaT (immortalized human keratinocyte cells), RAW264.7 and Jurkat.

Plant Tissue Culture

The Plant Tissue Culture (PTC) Laboratory located in SBC's Integrated Biodiversity Research Building (IBRB), began operations in December 2016. The PTC group has since started to work on plants of interest such as *Litsea cubeba, Adenosma nelsonioides* (Bunga Ta'ang) and *Boesenbergia stenophylla* for conservation and mass propagation.

The PTC team looks into methods to improve and obtain good genetic materials from those plants that can enhance yield and growth.

Plants that will be included under the PTC team's focus are *Elettariopsis* sp. (Ginger) and *Madhuca mottleyana* (Sekyu), both which have potential for horticulture.

The PTC team also manages a pilot scale planting plot at the neighbouring Agriculture Research Centre (ARC). The pilot scale plot has proven to be feasible for planting of the *Torenia* sp. (Sarang Bejit) where the harvest cycle has been determined.

Work on improving existing propagation methods of *Litsea cubeba* and *Aglaia stellatopilosa* were also carried out in Year 2016. The plants produce unique essential oil known as LitSara® oil, and the silvestrol compound respectively. These two plants are part of SBC's flagship research projects. The plants, from wildlings or cuttings are planted in SBC's nursery, headhouse and planter boxes to produce raw materials for research.

Under a project funded by the United Nations Development Programme (UNDP) for Access and Benefit Sharing (ABS), various propagation methods of *Litsea cubeba* were introduced to the villages that are participating in the project. The aim is to ensure that these communities have enough plant material for conservation purposes, and to increase the number of plants to meet the demand of the essential oil, for commercialisation. The five villages are Kampung Kiding in Padawan, Pa'Lungan and, Pa'Ukat in Bario, and Long Kerebangan and Long Telingan in Lawas.

Other useful aromatic plants for product development were also propagated throughout the year while pilot scale propagation of plants such as *Torenia* sp. (Sarang Bejit), *Adenosma nelsonioides* (Bunga Ta'ang), *Cymbopogon nardus* (Serai Wangi), *Pogostemon cablin* (Nilam) and *Plectranthus scutellarioides* (Ati-ati putih) which were planted in 2015, is still being continued.

Torenia sp.

Adenosma nelsonioides

Pogostemon cablin

Pilot scale planting plot at Agriculture Research Centre

Product Development

In Year 2016, the areas of focus for the Product Development team were on extraction of essential oil, formulation of personal care products, and quality control on the production of essential oils. The team's activities included distillation of essential oil from aromatic plants, solvent extraction and chemical analyses.

Product development plays a vital role in the formulation of natural and herbal based products, as well as the analyses on the quality of products developed.

A total of 72 essential oils were deposited, bringing the total of essential oils recorded in SBC's Natural Product Library to 420, at the end of December 2016. Essential oil extracts were subjected to routine antimicrobial screening to identify the bioactivity, and Gas Chromatography Mass Spectrometry (GCMS) profiles were carried out for compounds identification.

LitSara® Project: Development of Products

Development of product formulations were carried out for foot spray, liquid hand wash, and multipurpose spray/air freshener. Continuous studies on the improvement of these formulations were carried out, particularly on enhancing the moisturizing and lathering effects, as well as, prolonging specific scents.

Scent Project: Constructing Scent of *Aglaia odorata* and *Hydechium coronarium*

The fragrances of *Aglaia odorata* and *Hydechium coronarium* flowers were successfully developed into scent formulations in Year 2016. These scents could be used as perfumery ingredients and formulated into a range of products, such as fragrances and personal care items.

The *Aglaia odorata* is an ornamental plant that originates from mainland Asia, and is found throughout tropical Asia. The fragrant flowers emit very subtle, yet sweet floral fragrance. The *Hydechium coronarium* is often cultivated as a garden plant because of its lush appearance and striking inflorescences with very fragrant flowers. The fragrance emitted from the flowers can be described as fresh, lily-like, and floral.

The scent of the *Aglaia odorata* flower is reconstructed from four compounds, while the scent of the *Hydechium coronarium* is made up of five compounds, to replicate the original fragrance that is released by their flowers.

R&D Collaborations

As at 31 December 2016, SBC had established six new collaborations with national and international research institutions, and corporate organisations. These collaborations are governed by legal instruments such as Materials Transfer Agreement, Confidentiality & Non-Disclosure Agreement, and Memorandum of Understanding. This brings the total number of collaborations to 29 at the end of Year 2016.

The collaborations established were:

Evaluation of plant materials from Sarawak on its suitability to be used as ingredients for cosmetics, skin care, hair care and biotech industrial application by ATL Cosmetics Sdn Bhd

SBC entered into a research collaboration with ATL Cosmetics Sdn Bhd (ATL), Kuala Lumpur to determine the suitability of plant extract to be incorporated into the products.

Antibacterial activity against Methicillin-Resistant *Staphylococcus aureus* (MRSA) with Faculty of Medicine and Health Sciences, Universiti Malaysia Sarawak (UNIMAS)

SBC is collaborating with Dr Isabel Fong Lim from the Faculty of Medicine and Health Sciences, UNIMAS, in looking for plants that can inhibit Methicillin-Resistant *Staphylococcus aureus* (MRSA).

Transesterification and Fatty Acid Methyl Ester (FAME) Profile Analysis for Various Species of Microalgae and/or Yeast Oil" with Universiti Teknologi Petronas and Mitsubishi Corporation

SBC entered into a tri-parte research collaboration with Universiti Teknologi Petronas (UTP), Perak to work on selected microalgae from SBC's collection which was established with Mitsubishi Corporation.

Screening of new rubber degrading bacteria with Universiti Sains Malaysia

SBC is collaborating with Prof Sudesh Kumar A/L C Kanapathi Pillai from Universiti Sains Malaysia to look for a biological approach such as bacteria to degrade rubber, as a better disposal and recycling method.

Developing a concoction of microorganisms suitable for biodegradable solid wastes composting with Paneco Projects Sdn Bhd

Paneco Projects Sdn Bhd entered into a research collaboration with SBC in December 2016. This project aims to develop a microorganism concoction which is suitable for biodegradable solid waste composting.

Animal Health Science based research with Gretals Australia PTY Ltd

SBC is collaborating with Gretals Australia PTY Ltd to assess the possibility of using anti-worm and anti-microbial active extracts in animal health application.

Traditional Knowledge (TK) Documentation Programme

At the end of Year 2016, the Traditional Knowledge (TK) Documentation Programme had documented an accumulative number of 5,654 plants from 1,301 species (identification is still on-going) that are used by the indigenous communities throughout Sarawak.

SBC also has voucher specimens made up of 1,701 plant species, in its herbarium.

The number of plants documented and collected from each site is shown in Table 1.

As at 31 December 2016, SBC has carried out TK Documentation Workshops in 72 villages/areas throughout Sarawak, covering 17 ethnic communities. TK Documentation Consultative Meetings were also carried out in 61 areas.

In the same year, SBC carried out six TK Consultative Meetings with community leaders and conducted eight sessions of the 1st TK Documentation workshop with communities in the following districts/areas:

No	TK Consultative Meetings	1st TK Documentation Workshops
1	Iban community, Budu Sub-District, Saratok, Betong	Iban community at Rumah Kino, Ulu Menyang, Lubok Antu, Sri Aman
2	Iban community, Selangau District Office, Sibu	Iban community at Rumah Tanjung Baru, Maludam, Betong
3	Iban community, Bukit Sadok area, Betong District Office, Betong	Kelabit community at Pa'Derung, Bario, Miri
4	Sa'ban community, Long Banga, Baram, Miri	Kenyah community at Long Apu, Baram, Miri
5	Sekapan community, Belaga, Kapit	Bidayuh community at Kampung Peninjau Baru, Serumbu, Bau, Kuching
6	Malay and Iban community, Muara Tuang, Samarahan	Long Banga, Baram [in conjunction with Forest Department Scientific Expedition to Heart of Borneo (HOB)]
7		Iban community at Kampung Jambu Kerampak, Bukit Sadok, Betong
8		Iban community at Rh Sabang Babang area, Krian Saratok, Betong

SBC also carried out the following field work under various projects:

A. Collaboration with a food and beverages company: The five locations involved in the collection of raw materials for 12 species under the collaboration's first Statement of Work (SOW) are:
- Bidayuh community at Kampung Jagoi, Bau, Kuching
- Bidayuh community at Kampung Kiding, Padawan, Kuching
- Bidayuh community at Kampung Semadang, Penrissen, Kuching
- Bidayuh community at Kampung Semban, Penrissen, Kuching
- Penan community at Long Iman, Mulu, Miri

SBC also targeted 51 plant species from 12 locations for R&D under the collaboration's second SOW. These locations are:
- Bidayuh community at Kampung Jagoi, Bau, Kuching
- Bidayuh community at Kampung Kiding, Padawan, Kuching
- Bidayuh community at Kampung Peninjau Baru, Bau, Kuching
- Bidayuh community at Kampung Simuti, Padawan, Kuching
- Iban community at Kampung Jambu Kerampak, Betong
- Iban community at Kampung Rapak Tepus, Sri Aman
- Iban community at Rumah Entakong, Limbang
- Iban community at Rumah Ngumbang, Lubok Antu, Sri Aman

- Kayan community at Uma Bawang, Ulu Baram, Miri
- Kelabit community at Pa'Lungan, Bario, Miri
- Kenyah community at Long Pelutan, Ulu Baram, Miri
- Lun Bawang community at Long Sebangang Asal, Lawas, Limbang

A total of 63 plants species was collected under this collaboration.

B. SBC-MNRE-UNDP ABS Project - "Creating a value chain leading to the development of products for the healthcare, personal care and cosmeceutical industries from Traditional Knowledge Associated with Genetic Resources and Benefit Sharing in Sarawak".

Activities carried out under this project in Year 2016 were:
- ABS Workshop with communities
- Propagation of *Litsea cubeba* at Kampung Kiding, Long Kerebangan, Long Telingan, Pa'Ukat and Pa'Lungan
- The consultation and drafting of Benefit Sharing Agreement (BSA)

C. Geographical Indicator of *Adenosma nelsonioides*
SBC has applied for Geographical Indication for *Adenosma nelsonioides*. Carvacrol, the main compound found in the species, is known for use in cosmetics, the food industry and as a green pesticide. It is also widely used as antifungal, antimicrobial and anti-inflammatory. MyIPO Registrar accepted the Sarawak Adenosma GI application and it was advertised in the Government Gazette on 12 December 2016.

D. Poster and Booklet to Distinguish Between Upa Lalih and Upa Matar
Upa Lalih is known to be edible plant, while Upa Matar is believed to be poisonous and unfit for human consumption. The Kapit Health Department sought assistance from SBC to distinguish the two species, based on the plant morphology and chemical compound, following cases of poisoning in Kapit. The information between Upa Lalih and Upa Matar was prepared in the form of poster and booklet for awareness.

Table 1: Number of Plants Documented and Collected as at 31 December 2016

Community	Location		Total Plants Collected	Total
Bidayuh	1	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	10	Rumah Skatap, Betong	**276**	**1,200**
	11	Rumah Janang (previously known as Rumah Nyambong), Selangau, Sibu	**89**	
	12	Rumah Emak, Kapit	**89**	
	13	Rumah Changai, Song, Kuching	**86**	
	14	Rumah Simon Buei, Lubok Antu, Sri Aman	**86**	
	15	Rumah Bana, Sebauh, Bintulu	**70**	
	16	Rumah Roland (previously known as Rumah Lulut), Kapit	**55**	
	17	Rumah Rapak Tepus, Sri Aman	**54**	
	18	Rumah Bajau, Julau, Sarikei	**71**	
	19	Rumah Ngumbang, Nanga Sumpa, Batang Ai, Sri Aman	**32**	
	20	Kampung Sual, Simunjan, Samarahan	**53**	
	21	Ulu Mentawai expedition, Miri	**51**	
	22	Rumah Entakong, Nanga Sumpa, Sri Aman	**54**	
	23	Rumah Misoon, Sibuti, Miri	**20**	
	24	Kampung Sungai Rama, Sebuyau, Samarahan	**35**	
	25	Karangan Mong, Lubok Antu, Sri Aman	**20**	
	26	Rumah Kino, Lubok Antu, Sri Aman	**17**	
	27	Rumah Tanjung Baru, Maludam, Betong	**16**	
	28	Kampung Jambu Kelampak, Bukit Sadok, Betong	**12**	
	29	Rumah Sabang Babang, Krian Area, Saratok, Betong	**14**	
Kayan	30	Rumah Lesong, Sungai Asap, Belaga, Kapit	**81**	**185**
	31	Long Bedian, Baram, Miri	**75**	
	32	Uma Bawang, Long Lama, Baram, Miri	**29**	
Kelabit	33	Pa' Derung, Bario, Miri	**12**	**478**
	34	Pa' Lungan, Bario, Miri	**303**	
	35	Pa' Ukat, Bario, Miri	**163**	
Kenyah	36	Long Pelutan, Baram, Miri	**127**	**259**
	37	Long Ikang, Marudi, Miri	**58**	
	38	Long Palai, Baram, Miri	**13**	
	39	Long Amo, Belaga, Kapit	**47**	
	40	Long Apu, Baram, Miri	**14**	

Lun Bawang	41	Ba' Kelalan, Lawas, Limbang	**48**	**583**
	42	Long Kerabangan, Lawas, Limbang	**184**	
	43	Long Telingan, Lawas, Limbang	**120**	
	44	Long Sebangang Asal, Lawas, Limbang	**49**	
	45	Long Tuyo / Paya Maga Expedition, Lawas, Limbang	**137**	
	46	Long Tuyo/ Long Sukang, Lawas, Limbang	**45**	
Melanau	47	Kampung Jebungan, Mukah	**96**	**194**
	48	Kampung Pangtray, Mukah	**48**	
	49	Kampung Jemoreng, Mukah	**30**	
	50	Kampung Paloh, Belawai, Daro, Mukah	**20**	
Penan	51	Long Iman, Mulu, Marudi, Miri	**538**	**1,054**
	52	Batu Bungan, Mulu, Marudi, Miri	**452**	
	53	Long Latei, Long Bedian, Marudi, Miri	**6**	
	54	Long Wat, Murum, Bintulu	**31**	
	55	Long Seridan, Miri	**9**	
	56	Long Malin, Murum, Bintulu	**18**	
Punan	57	Rumah Ado, Tatau, Bintulu	**39**	**39**
Selako	58	Kampung Pueh, Sematan, Kuching	**112**	**112**
Kedayan	59	Rumah Ajan, Merapok, Lawas, Limbang (with Iban & Lun Bawang communities)	**62**	**62**
Tabun	60	Kampung Kuala Medalam, Nanga Mendamit, Limbang	**51**	**51**
Bisaya	61	Kampung Bidang, Limbang	**30**	**30**
Malay	62	Sundar, Lawas, Limbang (with Lun Bawang & Chinese)	**16**	**156**
	63	Maludam area, Maludam, Betong (with Iban community)	**25**	
	64	Kampung Hulu, Bako, Kuching Kampung Hilir, Bako, Kuching	**15**	
	65	Sebuyau area, Samarahan	**48**	
	66	Kampung Pasir Pandak, Santubong, Kuching	**28**	
	67	Kampung Selabat/ Pasir Putih, Muara Tebas, Kuching	**24**	
Baketan	68	Rumah Seking, Nanga Merit, Kapit	**19**	**19**
Sa'ban	69	Long Banga expedition, Baram, Miri	**65**	**65**
	Total Number of Plants Collected		**5,654**	

Laila Taib Ethnobotanical Garden

A total of 515 plants were featured in the garden in Year 2016. These were made up of 92 families and 411 species of plants.

The plants featured in the garden were collected from 13 different ethnic communities throughout Sarawak who are participating in SBC's Traditional Knowledge Documentation Programme. These communities are the Bidayuh, Penan, Iban, Kelabit, Kenyah, Kayan, Lun Bawang, Punan, Bisaya, Selako, Tabun, Melanau and Malay.

No	Community	Number of Plants
1	Bidayuh	60
2	Penan	47
3	Iban	143
4	Kelabit	39
5	Kenyah	13
6	Kayan	19
7	Lun Bawang	42
8	Punan	19
9	Bisaya	20
10	Selako	28
11	Tabun	22
12	Melanau	24
13	Malay	39
Total Number of Plants		**515**

The garden aims to create awareness on the importance of documenting and transmitting traditional knowledge of useful indigenous plants. It also provides a site for *ex-situ* conservation of Sarawak's plant diversity, which creates an interest among the visitors towards plants found in Sarawak.

A total of 98 visits took place in Year 2016; these included members of the public, institutions of higher learning, schools, NGOs and corporate bodies.

Biodiversity-Biotechnology Awareness & Appreciation Programme

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

Among the initiatives carried out are: awareness and appreciation visits to SBC; public talks; participating in exhibitions; activities with schools, and, the Biodiversity Day celebrations held at SBC's premises.

Highlight Events

Tree planting by Datuk Patinggi Tan Sri Adenan Satem during the launching on LitSara® and SBC's Integrated Biodiversity Research Building

SBC Biodiversity Day 2016

On 14 and 15 May 2016, SBC held its annual Biodiversity Day at its premises. The theme for the event was "Mainstreaming Biodiversity; Sustaining People and their Livelihoods", which was also the theme for the International day for Biological Diversity. The International Day for Biological Diversity is observed worldwide, on 22 May annually.

The main objective of this annual event is to promote the importance of Sarawak's local biodiversity, and to create awareness on sustainable research and development on biodiversity found in Sarawak.

YB Tan Sri Datuk Amar Haji Mohamad Morshidi bin Abdul Ghani, the State Secretary of Sarawak, and Sarawak Biodiversity Council Chairman officially launched the event.

During the two-days event, various activities were held. These included exhibition on biodiversity and research, traditional uses of biodiversity, public awareness talks, games, and hands on sessions on science.

A total of 1,129 visitors participated in the two days event.

Launching of LitSara® and SBC's Integrated Biodiversity Research Building by Chief Minister, Datuk Patinggi Tan Sri Adenan Satem.

On 13 July 2016, Chief Minister of Sarawak Datuk Patinggi Tan Sri Adenan Satem launched LitSara® and SBC's Integrated Biodiversity Research Building (IBRB). Also present at the event were Assistant Minister for Environment Datu Len Talif Salleh, Assistant Minister for Science, Research and Biotechnology, YB Dr. Annuar bin Rapaee, State Secretary Tan Sri Datuk Amar Mohamad Morshidi bin Abdul Ghani, and former Deputy Chief Minister, Datuk Patinggi Tan Sri Dr. Alfred Jabu anak Numpang.

The production of LitSara® essential oil from the Sarawak Litsea tree is a pilot project which involves Access and Benefit Sharing (ABS), and the acquisition of Prior Informed Consent (PIC) from participating communities, who are actively involved in the development of the essential oil. The communities involved are the Kelabit of Pa'Ukat and Pa'Lungan in Bario, the Lun Bawang of Long Telingan and Long Kerebangan in Lawas, and the Bidayuh of Kampung Kiding.

The newly launched IBRB is the final phase of the physical development of SBC's laboratories. It is equipped with state of the art equipment that help researchers tell the exact mass of compound to the fourth decimal place.

The IBRB also houses expanded chemistry and plant tissue culture labs, researchers' workstations, SBC's Natural Products Library, a seminar room and a gallery for visitors.

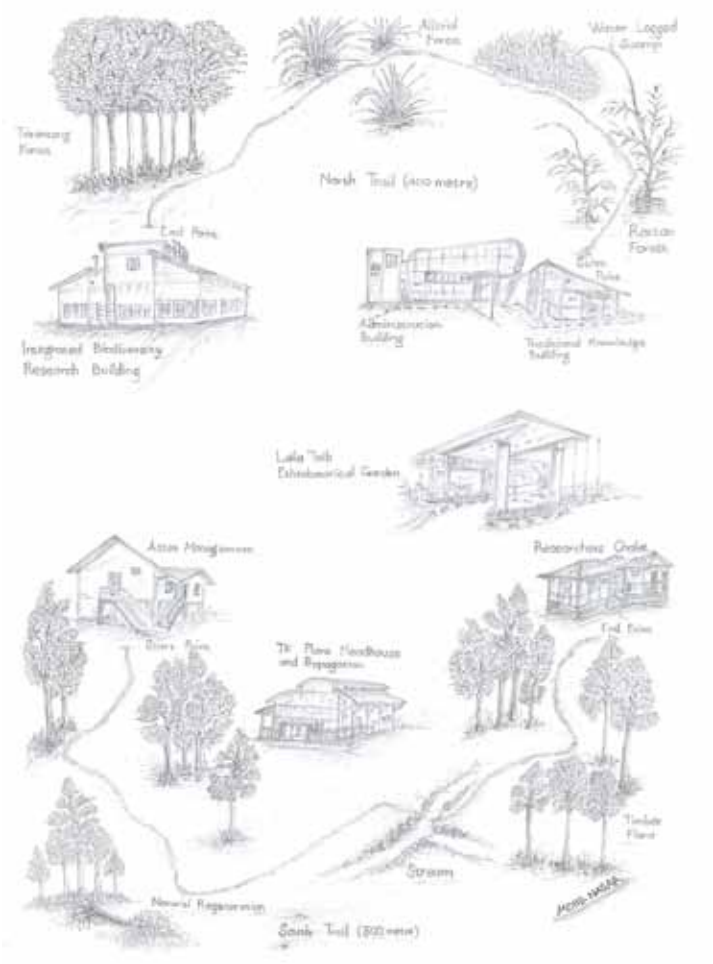
SBC Nature Trails and Scent Trekking

SBC offers an interesting trekking experience along its two nature trails which are made up of the Ecology and Discovery trails. These two trails promote awareness in environmental education and conservation, to the general public.

The Ecology trail passes through two distinct ecosystems in the alluvial forest and old lowland secondary forest, while the Discovery Trail passes through a lowland rainforest.

These two trails are open to visitors via reservations or pre-arranged appointments. Each trail is limited to a maximum of 15 persons at any one time. The guided trekking activity for each trail takes about an hour.

Throughout the trekking activity, visitors will be introduced to useful and interesting plants which are found along both trails.



Students experiencing SBC's Nature Trails.

Camera trap recording of a tree shrew.

Scent trekking along SBC's Nature Trails.

The trails also offer visitors a unique rainforest-olfactory experience, as they will encounter plants that produce interesting scents.

Visitors have the opportunity to participate in interactive quizzes while walking along the trails or seek out these fragrant plants. Successful participants who answer the quizzes correctly will be awarded with a "Wilderness Explorer" medal.

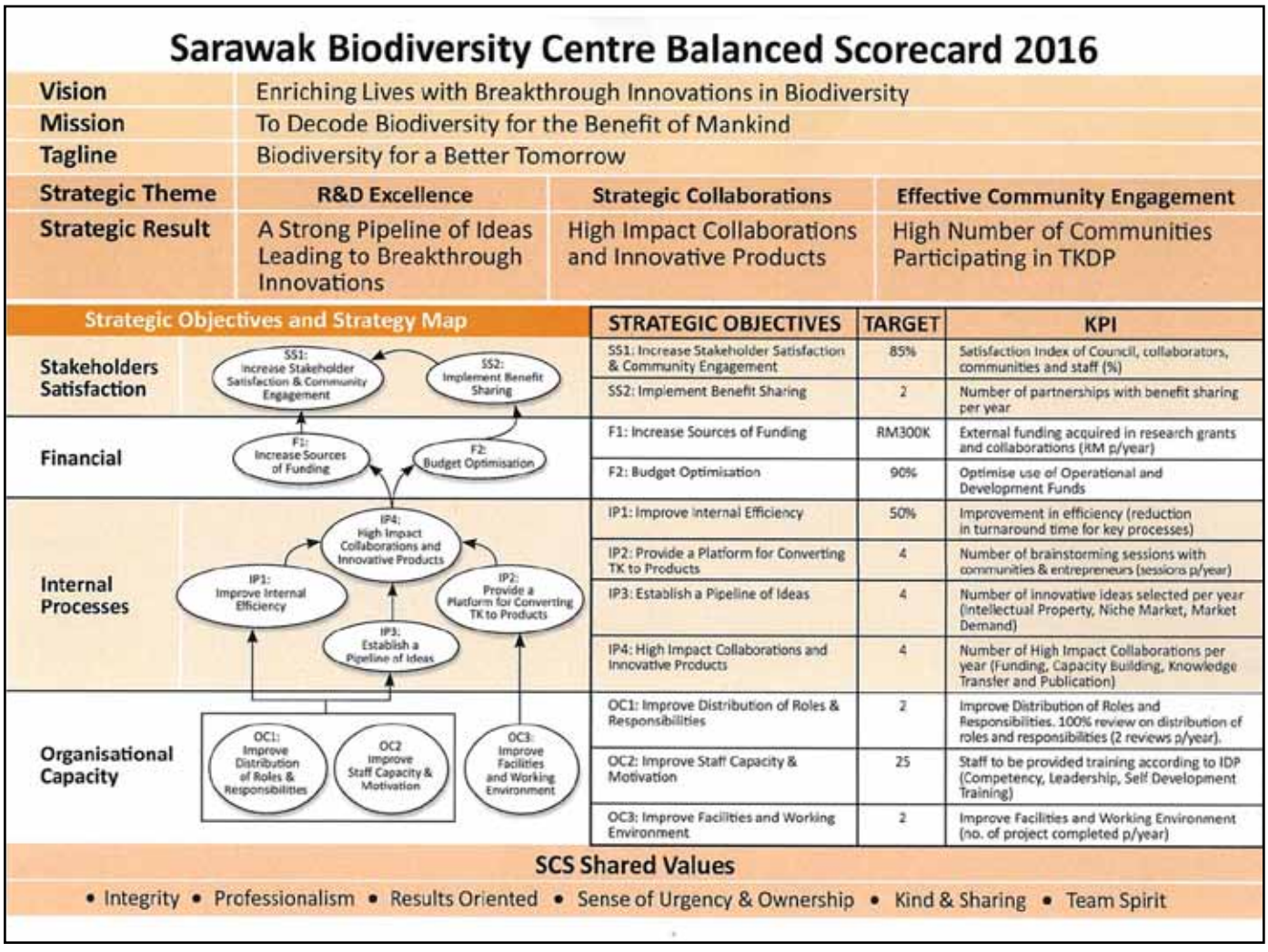
Participants will also have the opportunity to view camera trap recordings of wildlife found in the forest.

Members of the public who are interested to participate in SBC's awareness activities can contact the Centre via email at biosar@sbc.org.my.

Biodiversity-Biotechnology Awareness & Appreciation Programme

In Year 2016, SBC carried out/organised and participated in the following activities under this programme:

No	Activity	Number of Activities Achieved in 2016
1	Awareness & Appreciation Visits (schools/ institutions/ organizations)	38 Visits
2	Public Awareness Visits to Schools/ Divisional Awareness Talks	10 Visits
3	Public Awareness Talks/Workshops	17 Public Talks/Workshops
4	Participation in School Programme	8 Programmes
5	Participation at Exhibitions	16 Exhibitions
6	VIP and Corporate Visits	60 Visits
7	Press releases/Articles/Features	28 Press Releases/Articles published
8	SBC Open Day	1 event



On 8 - 10 January 2016, SBC held a Brainstorming Retreat involving selected staff from various levels and programmes. This objective of the retreat was to set directions for SBC under 11th Malaysian Plan. The outcomes of the retreat are as follows:

- a review of SBC's Vision and Mission to align SBC directions in implementing Access and Benefit Sharing (Sarawak Biodiversity Centre Ordinance, Amendment 2016); and
- a review of the SBC's Balanced Scorecard to focus on creating a value chain leading to benefit sharing.

SBC achieved a satisfactory score of 8.59 out of 10.00 points on its Scorecard for Year 2016.

Achievements

Certificate of Achievement for Three Consecutive Years without Sick Leave (2013-2016)

1. Ajuwin anak Lain
2. Alan anak Ringgah
3. Arzie binti Ramli
4. Barbara anak Ngikoh@Nyikoh
5. Bee David anak Lamada
6. Bernardine Ida anak Joseph Jinam
7. Dr Yeo Tiong Chia
8. Fesmuela anak Kagong
9. Joeng anak Melos
10. Margarita Naming
11. Ng Yik Han
12. Rosy anak Tian Lin
13. Sabda bin Safiee
14. Sunarjo bin Suip

Sijil Anugerah Perkhidmatan Cemerlang Tahun 2015 (APC)

1. Ajuwin anak Lain
2. Dr Ng Lee Tze
3. Hugh anak Doyos
4. Mohamad Nasar Bin Pawi
5. Mohd Fadeli Haironi Bin Jemat
6. Rigep anak Anyain
7. Selwynn anak Jaoi Edward
8. Sunarjo Bin Suip

Sijil Penghargaan Perkhidmatan Cemerlang Tahun 2015

1. Aloysius Sim Kwang Peng
2. Anna Ng Mei Na
3. Asha Devi Kaushal
4. Aziman Ahmad
5. Elizabeth Alice anak Gabriel Nasib
6. Elsa Isla Jong
7. Gilbert Lau Sei Kung
8. Harny Anak Chapi
9. Keekoti Sue anak Betin
10. Margarita Naming
11. Michele Mejin
12. Ng Yik Han
13. Noor Pahtiwi Binti Bohari
14. Noreha Binti Mahidi
15. Nuraqilah Binti Othman
16. Rosy anak Tian Lin
17. Tora anak Ranggon
18. Wong Hie Ping
19. Zurien Amiera Binti Irwan

Journal Contributions 2016

Publication of "Inhibition of nasopharyngeal carcinoma cell proliferation and synergism of cisplatin with silvestrol and episilvestrol isolated from *Aglaia stellatopilosa*" in Experimental and therapeutic medicine, 2016, 11, 2117-2126

- Maelinda Daker
- **Yeo Jiun Tzen**
- Norhasimah Bakar
- **Asma' Saiyidatina Aishah Abdul Rahman**
- Munirah Ahmad
- **Yeo Tiong Chia**
- Alan Khoo Soo Beng

Publication of "Cyclopenta[b]benzofuran and secodam marane derivatives from the stems of *Aglaia stellatopilosa*" in the Journal of Natural Product, Volume 79,784-791, 2016

- **Nuraqilah Othman**
- Li Pan
- **Michele Mejin**
- **Julian Voong**
- Hee-byung Chai
- Caroline M. Pannell
- Douglas A. Kinghorn
- **Yeo Tiong Chia**

Publication of "Genome-wide identifcation of multifunctional laccase gene family in cotton (*Gossypium spp.*); expression and biochemical analysis during fiber development" in the Scientific Report Nature

- Vimal Kumar Balasubramanian
- Krishan Mohan Rai
- Sandi Win Thu
- **Hii Mei Mei**
- Venugopal Mendu

Anthelmintic activity of selected ethno-medicinal plant extracts on parasitic stages of *Haemonchus contortus* in the BioMed Central

- Rasika Kumarasingha
- Sarah Preston
- **Yeo Tiong Chia**
- **Diana Lim S. L.**
- **Tu Chu Lee**
- Enzo A. Palombo
- Jillian M. Shaw
- Robin B. Gasser
- Peter R. Boag

Presentations at Conferences 2016

No	Title	Presenter	Type	Conference/Seminar/ Workshop/Exhibition	Date
1	Documenting Traditional Knowledge, Prior Informed Consent & Sharing Benefits: Sarawak's Experience	Margarita Naming	Oral	ASEAN Conference on Biodiversity 2016 (ACB 2016), Thailand	15 - 19 February 2016
2	Summary on ABS Session: Issues and Challenges	Asha Devi Kaushal	Oral		
3	Implementation of ABS in Sarawak, Malaysia: A sustainable pathway to benefit from traditional knowledge documentation	Margarita Naming	Oral	Bhutan National Seminar on Traditional Knowledge Associated with Biological Resources	29 - 30 March 2016
4	Bioprospecting the Rainforest in a Meaningful Way	Dr. Yeo Tiong Chia	Oral	International Conference on Beneficial Microbes (ICOBM) 2016, Thailand	31 May - 2 June 2016
5	Diversity of Fungi in Borneo, Sarawak	Dr. Noreha Mahidi	Oral		
6	Biosynthetic Potential of *Verrucosispora* sp., A Rare Actinomyces Isolated from Sarawak, East Malaysia	Ann Basik, Ajuwin Lain and Yeo Tiong Chia	Poster		
7	Sarawak's Experience on Traditional Knowledge and Genetic Resources	Dr. Yeo Tiong Chia	Oral	International Trade and Health Conference 2016 (Thailand) - Trans Pacific Partnership (TPP): Impact on Thailand's Economy, Society, and Health System	8-10 August 2016
8	Fungi of Interest Isolated from Loagan Bunut National Park, Miri, Sarawak	Jamilah Hassan, Elaine Remi, Chia Hwa Chuan and Noreha Mahidi	Poster	15th International Peat Congress 2016, Kuching, Sarawak, Malaysia	15 - 19 August 2016
9	Study of peat soil microbial communities of Loagan Bunut National Park	Barbara Ngikoh, Hii Mei Mei and Ng Lee Tze	Poster		
10	Antimicrobial Activity of Essential Oils from Sarawak Local Medicinal And Aromatic Plants	Jane Sebastian Taka, Noor Pahtiwi Bohari and Noreha Mahidi	Poster	Malaysian Society for Microbiology Postgraduate Seminar 2016, UKM, Bangi, Malaysia	24 August 2016
11	Antimicrobial Potential and Industrial Enzymes Screening of *Microbispora* sp. from Medicinal Plant in Loagan Bunut, Sarawak	Irdlinna Idwar, Sunita Sara Gill and Noreha Mahidi	Poster		
12	Perlindungan sumber biologi dan pengetahuan tradisional komuniti asli serta tempatan di Sarawak	Aloysius Sim Kwang Peng	Oral	Persidangan Kebangsaan Agrobiodiversiti 2016 (NAC), Terengganu, Malaysia	4 - 6 October 2016
13	Perspektif Sarawak in Implementing Access Benefit Sharing (ABS)	Tu Chu Lee	Oral	Seminar Pemuliharaan & Pemerkasaan Pengetahuan Tradisi 2016, Kuala Lumpur, Malaysia	2 November 2016

SBC Audit Committee 2016

YBhg Datu Laura Lee Ngien Hion

Deputy State Financial Secretary, State Financial Secretary's Office
Audit Committee Chairman

YBhg Datu Lai Kui Fong

Director, Department of Agriculture
Audit Committee Member

Mr Peter Sawal

Controller, Natural Resources & Environment Board (NREB)
Audit Committee Member

Mr John Kennedy Janang

Principal Assistant Secretary, State Financial Secretary's Office
Audit Committee Member

Ms Christina Wong Hie Ping

Accountant, Sarawak Biodiversity Centre
Audit Committee Secretary

SBC Establishment Committee 2016

YBhg Datu Haji Misnu Bin Haji Taha

Deputy State Secretary (Administrative, Security & Corporate Affairs)
Establishment Committee Chairman (until 16 June 2016)

YBhg Datu Haji Ismawi Bin Haji Ismuni

Deputy State Secretary (Socio-Economic Transformation)
Establishment Committee Chairman (w.e.f.30.09.2016)

YBhg Datu Sudarsono Osman

Permanent Secretary, Ministry of Resource Planning and Environment
Establishment Committee Deputy Chairman

YBhg Datu Lai Kui Fong

Director, Department of Agriculture
Establishment Committee Member

Dr Sabariah Putit

Director, Chief Minister's Department (Human Resource Management)
Establishment Committee Member

Dr Yeo Tiong Chia

Chief Executive Officer, Sarawak Biodiversity Centre
Establishment Committee Secretary

SBC Finance and Investment Committee 2016

YBhg Dato Sri Ahmad Tarmizi Bin Haji Sulaiman

State Financial Secretary
Finance & Investment Committee Chairman

YBhg Datu Sudarsono Osman

Permanent Secretary, Ministry of Resource Planning and Environment
Finance & Investment Committee Deputy Chairman

YBhg Datu Lai Kui Fong

Director, Department of Agriculture
Finance & Investment Committee Member

Tuan Haji Sapuan Ahmad

Director of Forests/Controller of Wildlife/
Controller of National Parks And Nature Reserves
Finance & Investment Committee Member

Dr Yeo Tiong Chia

Chief Executive Officer, Sarawak Biodiversity Centre
Finance & Investment Committee Secretary

Financial Statement for the Year Ended 2016

SARAWAK BIODIVERSITY COUNCIL

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

CONTENT

SARAWAK BIODIVERSITY COUNCIL

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

COUNCIL MEMBERS

Chairman	:	State Secretary Sarawak YB Tan Sri Datuk Amar Haji Mohamad Morshidi bin Abdul Ghani, PSM, DA, PGBK, JSM, PPC (Emas), PPB
Deputy Chairman	:	Permanent Secretary Ministry of Resource Planning and Environment YBhg Datu Haji Sudarsono bin Osman, DJBS, PPC, PBK, PPB (until 14 March 2017) Dr Haji Wan Lizozman Bin Wan Omar, PPB, PBK, PPC (Emas) (w. e. f. 15 March 2017)
Secretary:		Chief Executive Officer Dr Yeo Tiong Chia, PBK
Council Members	:	State Attorney General, Sarawak Yang Arif Datu Haji Abdul Razak Tready, DJBS, PPC (Emas), PPB, PPDM (until 31 December 2016) Yang Arif Tuan Talat Mahmood bin Abdul Rashid, PPC (Emas) (w. e. f. 1 January 2017) State Financial Secretary YBhg Dato Sri Ahmad Tarmizi bin Haji Sulaiman, PNBS, DJBS Deputy State Secretary (ASCA) YBhg Datu Haji Misnu bin Haji Taha, DJBS, PPC, PPB, PPD, PPT (until 15 June 2016) Deputy State Secretary (SET) YBhg Datu Haji Ismawi bin Ismuni, PPB (Perak), PBK, DJBS, PBS, PTE (Jubli Emas) (w. e. f. 30 September 2016) Director Department of Agriculture, Sarawak YBhg Datu Lai Kui Fong, DJBS, PPC (Emas), KMN, PBK, PPB, PPS, PPT Director Department of Forest, Sarawak Tuan Haji Sapuan Ahmad, PTE (Jubli Emas), PBK, PPS, PPB Controller of Environmental Quality Mr Peter Sawal, PBK, PPB

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

SARAWAK BIODIVERSITY COUNCIL

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

PENYATA PENGERUSI DAN TIMBALAN PENGERUSI

Kami, **TAN SRI DATUK AMAR HAJI MOHAMAD MORSHIDI BIN ABDUL GHANI** dan **DR HAJI WAN LIZOZMAN BIN WAN OMAR** yang merupakan Pengerusi dan Timbalan Pengerusi **MAJLIS KEPELBAGAIAN BIOLOGI SARAWAK** dengan ini menyatakan bahawa, pada pendapat Ahli - Ahli Majlis, Penyata Kewangan yang mengandungi Lembaran Imbangan, Penyata Pendapatan, 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 2016** dan hasil kendaliannya serta perubahan kedudukan kewangannya bagi tahun yang berakhir pada tarikh tersebut.

Bagi pihak Majlis,

.....

TAN SRI DATUK AMAR HAJI MOHAMAD MORSHIDI BIN ABDUL GHANI

Tarikh: 26.4.17

Kuching

Bagi pihak Majlis,

.....

DR HAJI WAN LIZOZMAN BIN WAN OMAR

Tarikh: 26/04/2017

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 (K.P. NO.: 660420-13-5379)**, pegawai utama yang bertanggungjawab ke atas pengurusan kewangan dan rekod-rekod perakaunan **MAJLIS KEPELBAGAIAN BIOLOGI SARAWAK**, dengan ikhlasnya mengakui bahawa Lembaran Imbangan, Penyata Pendapatan, 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 21 haribulan April 2017)

.....

Di hadapan saya

.....

MAGISTRATE

(IBRAHIM BIN KIPLI)
1st Class Magistrate
Kuching District Office
State of Sarawak.

LAPORAN KETUA AUDIT NEGARA
MENGENAI PENYATA KEWANGAN
MAJLIS KEPELBAGAIAN BIOLOGI SARAWAK
BAGI TAHUN BERAKHIR 31 DISEMBER 2016

Laporan Mengenai Penyata Kewangan

Pendapat

Penyata Kewangan Majlis Kepelbagaian Biologi Sarawak telah diaudit oleh wakil saya yang merangkumi Penyata Kedudukan Kewangan Pada 31 Disember 2016 dan Penyata Pendapatan Komprehensif, Penyata Perubahan Dalam 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 13 hingga 29.

Pada pendapat saya, penyata kewangan ini memberikan gambaran yang benar dan saksama mengenai kedudukan kewangan Majlis Kepelbagaian Biologi Sarawak pada 31 Disember 2016 dan prestasi kewangan serta aliran tunai bagi tahun berakhir pada tarikh tersebut selaras dengan piawaian pelaporan kewangan yang diluluskan di Malaysia dan Ordinan Badan Berkanun (Prosedur Kewangan Dan Perakaunan), 1995 serta Ordinan Pusat Kepelbagaian Biologi Sarawak, 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 Ordinan Badan Berkanun (Prosedur Kewangan Dan Perakaunan) 1995 serta Ordinan Pusat Kepelbagaian Biologi Sarawak, 1997. Ahli Majlis juga bertanggungjawab terhadap penetapan kawalan dalaman yang perlu bagi membolehkan penyediaan penyata kewangan Majlis Kepelbagaian Biologi Sarawak yang bebas daripada salah nyata yang ketara sama ada disebabkan fraud atau kesilapan.

Semasa penyediaan penyata kewangan Majlis Kepelbagaian Biologi Sarawak, 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 professional 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 dan 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 Ordinan Badan Berkanun (Prosedur Kewangan Dan Perakaunan), 1995 dan Ordinan Pusat Kepelbagaian Biologi Sarawak, 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

a. Seperti yang dinyatakan pada Nota 2 dan 3 kepada penyata kewangan, Majlis Kepelbagaian Biologi Sarawak telah menerima pakai piawaian perakaunan *Malaysian Private Entities Reporting Standard* (MPERS) diluluskan oleh Ahli Majlis mulai 1 Januari 2016 dengan tarikh peralihan pada 1 Januari 2015. Piawaian ini diterima pakai secara retrospektif oleh Ahli Majlis terhadap angka perbandingan dalam penyata kewangan ini, termasuk Penyata Kedudukan Kewangan Majlis Kepelbagaian Biologi Sarawak pada 31 Disember 2015 dan 1 Januari 2015, dan Penyata Pendapatan Komprehensif, Penyata Perubahan Dalam Ekuiti serta Penyata Aliran Tunai bagi tahun berakhir pada 31 Disember 2015 dan pendedahan berkaitan. Tanggungjawab saya sebagai sebahagian daripada pengauditan penyata kewangan Majlis Kepelbagaian Biologi Sarawak bagi tahun berakhir 31 Disember 2016, dalam keadaan ini, termasuk mendapatkan bukti audit yang mencukupi dan bersesuaian yang baki awal pada 1 Januari 2016 tidak mengandungi salah nyata yang boleh memberi kesan ketara terhadap kedudukan kewangan pada 31 Disember 2016 dan prestasi kewangan dan aliran tunai bagi tahun berakhir pada tarikh tersebut.

b. 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 : 23 JUN 2017

SARAWAK BIODIVERSITY COUNCIL

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

STATEMENTS OF FINANCIAL POSITION
AS AT 31 DECEMBER 2016

	Note	2016 RM	Restated 2015 RM
NON-CURRENT ASSETS			
Property, plant and equipment	5	21,143,248	19,323,981
CURRENT ASSETS			
Cash and cash at bank	6	2,593,710	3,440,791
Fixed deposits	6	27,118,342	30,793,992
Trade and other receivables	7	560,025	753,552
Tax refundable	8	-	2,719
Total current assets		30,272,077	34,991,054
TOTAL ASSETS		**51,415,325**	**54,315,035**
EQUITY			
General reserve	9	41,049,190	37,123,210
CURRENT LIABILITIES			
Development funds	10	9,800,140	14,649,518
Other payables and accruals	11	534,031	2,542,307
Provision for taxation	8	31,964	-
Total current liabilities		10,366,135	17,191,825
TOTAL LIABILITIES		10,366,135	17,191,825
TOTAL EQUITY AND LIABILITIES		**51,415,325**	**54,315,035**

SARAWAK BIODIVERSITY COUNCIL

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

STATEMENTS OF COMPREHENSIVE INCOME
FOR THE FINANCIAL YEAR ENDED 31 DECEMBER 2016

	Note	2016 RM	Restated 2015 RM
Revenue	12	1,040,124	1,212,382
Government grant	13	13,467,044	6,493,277
		14,507,168	7,705,659
Staff cost	14	(6,338,839)	(5,872,871)
Depreciation of property, plant & equipment	5	(2,432,364)	(1,217,375)
Other operating expenses	15	(1,566,638)	(2,498,804)
Surplus/(Deficit) before tax		4,169,327	(1,883,391)
Tax expense	8	(243,347)	(293,130)
Surplus/(Deficit) for the year		3,925,980	(2,176,521)

The accompanying notes on pages 13 to 29 form an integral part of the financial statements.

SARAWAK BIODIVERSITY COUNCIL

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

STATEMENTS OF CHANGES IN EQUITY
FOR THE FINANCIAL YEAR ENDED 31 DECEMBER 2016

	General Reserve RM
Balance as at 1 January 2015	33,682,270
Effect of adopting MPERS	5,617,461
Restated Balance as at 1 January 2015	**39,299,731**
Deficit for the financial year	(2,176,521)
Balance as at 31 December 2015	**37,123,210**
Surplus for the financial year	3,925,980
Balance as at 31 December 2016	**41,049,190**

The accompanying notes on pages 13 to 29 form an integral part of the financial statements.

SARAWAK BIODIVERSITY COUNCIL

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

STATEMENTS OF CASH FLOWS
FOR THE FINANCIAL YEAR ENDED 31 DECEMBER 2016

	Note	2016 RM	Restated 2015 RM
CASH FLOW FROM OPERATING ACTIVITIES			
Surplus/(deficit) before tax		4,169,327	(1,883,391)
Adjustments for the items not involving the movements of cash and cash equivalents			
Development grant		(8,467,044)	(4,493,277)
Depreciation of property, plant & equipment	5	2,432,364	1,217,375
Interest income		(973,390)	(1,172,520)
Loss on disposal of property, plant and equipment		1,584	-
Operating deficit before working capital changes		(2,837,159)	(6,331,813)
Decrease / (increase) in other receivables		193,527	(62,349)
(Decrease) / increase in other payables		(2,008,276)	1,833,917
Cash used in operation		(4,651,908)	(4,560,245)
Income tax paid		(208,664)	(312,828)
Net cash used in operating activities		(4,860,572)	(4,873,073)
CASH FLOW FROM INVESTING ACTIVITIES			
Purchase of property, plant and equipment		(262,818)	(2,878,504)
Development grant received		6,506,931	4,053,727
Development expenditure		(6,879,662)	(5,885,141)
Interest income		973,390	1,172,520
Net cash generated from / (used in) investing activities		337,841	(3,537,398)
Net decrease in cash and cash equivalents		**(4,522,731)**	**(8,410,471)**
Cash and cash equivalents at beginning of the year		34,234,783	42,645,254
Cash and cash equivalents at end of the year	6	**29,712,052**	**34,234,783**

The accompanying notes on pages 13 to 29 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 2016

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 on the historical cost basis convention.

NOTES TO THE FINANCIAL STATEMENTS
FOR THE FINANCIAL YEAR ENDED 31 DECEMBER 2016

(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.
• Temporary office	10% p.a.
• Specialised equipment (equipment)	15% p.a.
• Specialised equipment (computer)	20% p.a.
• Specialised equipment (software)	20% p.a.
• Lab specialised equipment	15% p.a.
• Lab furniture & fittings	10% p.a.
• Motor vehicles	20% p.a.
• Nursery sheds	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 recognized in Income Statements.

(c) Operating grant

Grant received from the State Government for the operation or maintenance of the Council's activities and is credited to Income Statements.

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 2016

(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 as income 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 income or as a revaluation increase.

(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 recognized 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 recognized when the absences occur.

(ii) Defined contribution plan

The Council's contribution to defined contribution plans are charged to the income statement 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 Income Statement as incurred.

(g) Financial assets and liabilities

Financial assets and liabilities are recognised in the Statements 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 statements of financial position date.

(ii) Other payables

Other payable are stated at cost, which is fair value of the consideration paid in the future for good 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.

(i) Interest revenue is recognised using the effective interest method.

(ii) 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 statements of cash flows comprise cash and bank balances, short-term bank deposits 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 recognized 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 statements of financial position date and adjusted to reflect the current best estimate.

NOTES TO THE FINANCIAL STATEMENTS
FOR THE FINANCIAL YEAR ENDED 31 DECEMBER 2016

3. TRANSITION TO THE MPERS

The Council's financial statements for the financial year from 1 January 2016 to 31 December 2016 are the first financial statements prepared in accordance with the MPERS, which is the beginning of the earliest period presented.

The Council's transition date is 1 January 2016. The Council prepared its opening MPERS statement of financial position at that date.

The Council has applied all the mandatory exceptions and certain of the optional exemptions from full retrospective application of the MPERS. Previously, the Council presents the most recent financial statements using Private Entity Reporting Standards ("PERS"). The effect of the new standards in MPERS are discussed below:

(a) Write-off of deferred charges that do not meet the MPERS definition of an intangible assets

Costs in relation to deferred income that do not meet the definition of intangible assets under the MPERS have been included in General Reserve at the Council's date of transition.

Reconciliation of Financial Statements

At the date of transition to MPERS - 1 January 2015

	Previous PERS RM	Effects of Transition to MPERS RM	MPERS RM
Non-Current Liabilities			
Deferred income	5,617,461	(5,617,461)	-
Equity:			
General reserve	33,682,270	5,617,461	39,299,731
Total Equity and Liabilities	**39,299,731**	**-**	**39,299,731**

NOTES TO THE FINANCIAL STATEMENTS
FOR THE FINANCIAL YEAR ENDED 31 DECEMBER 2016

At the date of the previous reporting period - 31 December 2015

	Previous PERS RM	Effects of Transition to MPERS RM	MPERS RM
Non-Current Liabilities			
Deferred income	9,177,895	(9,177,895)	-
Equity:			
General reserve	27,945,315	9,177,895	37,123,210
Total Equity and Liabilities	**37,123,210**	**-**	**37,123,210**

Reconciliation of profit or loss

	Previous PERS RM	Effects of Transition to MPERS RM	MPERS RM
Revenue	1,212,382	-	1,212,382
Government grants	2,000,000	4,493,277	6,493,277
Transferred from deferred income	932,843	(932,843)	-
	4,145,225		7,705,659
Staff cost	(5,872,871)	-	(5,872,871)
Depreciation of property, plant & equipmen	(1,217,375)	-	(1,217,375)
Other operating expenses	(2,498,804)	-	(2,498,804)
Deficit before taxation	(5,443,825)		(1,883,391)
Taxation	(293,130)	-	(293,130)
Net deficit after taxation	**(5,736,955)**	**3,560,434**	**(2,176,521)**

NOTES TO THE FINANCIAL STATEMENTS
FOR THE FINANCIAL YEAR ENDED 31 DECEMBER 2016

4. CRITICAL ACCOUNTING JUDGEMENTS AND KEY SOURCES OF ESTIMATION UNCERTAINTY

(a) Critical judgements in applying the accounting policies

The judgements, 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.

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 judgement 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.

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 2016

5. Property, plant and equipment

2016	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 2016	8,395,989	707,422	444,946	866,522	542,009	859,980	110,830	378,473	94,068	12,309,457	647,730	25,357,426
Additions	7,711,978	162,421	598,490	1,281,961	44,300	173,193	-	-	-	2,969,496	-	12,941,839
Disposals	(20,330)	(4,700)	-	-	(2,100)	(119,020)	(1,050)	(6,000)	-	(14,599)	(3,330)	(171,129)
At 31 December 2016	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
Accumulated Depreciation												
At 1 January 2016	3,032,808	516,707	290,729	760,416	417,590	629,647	110,792	378,472	53,741	7,911,984	619,184	14,722,070
Additions	804,464	53,748	78,128	219,616	53,092	97,682	-	-	8,407	1,111,862	5,365	2,432,364
Disposals	(19,175)	(4,698)	-	-	(1,680)	(119,019)	(1,049)	(6,000)	-	(14,595)	(3,330)	(169,546)
At 31 December 2016	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
Carrying amounts At 31 December 2016	**12,269,540**	**299,386**	**674,579**	**1,168,451**	**115,207**	**305,843**	**37**	**1**	**31,920**	**6,255,103**	**23,181**	**21,143,248**
Add:	**Work-in-progress**											-
												21,143,248

NOTES TO THE FINANCIAL STATEMENTS FOR THE FINANCIAL YEAR ENDED 31 DECEMBER 2016

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

2015	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 2015	6,922,675	668,492	442,546	818,072	542,009	859,980	110,830	378,473	94,068	9,335,232	647,730	20,820,107
Additions	1,473,314	38,930	2,400	48,450	-	-	-	-	-	2,974,225	-	4,537,319
At 31 December 2015	8,395,989	707,422	444,946	866,522	542,009	859,980	110,830	378,473	94,068	12,309,457	647,730	25,357,426
Accumulated Depreciation												
At 1 January 2015	2,689,257	465,269	254,648	694,071	363,855	537,800	110,792	378,472	45,334	7,394,028	571,169	13,504,695
Additions	343,551	51,438	36,081	66,345	53,735	91,847	-	-	8,407	517,956	48,015	1,217,375
At 31 December 2015	3,032,808	516,707	290,729	760,416	417,590	629,647	110,792	378,472	53,741	7,911,984	619,184	14,722,070
Carrying amounts At 31 December 2015	**5,363,181**	**190,715**	**154,217**	**106,106**	**124,419**	**230,333**	**38**	**1**	**40,327**	**4,397,473**	**28,546**	10,635,356
Add:	Work-in-progress											8,688,625
												19,323,981

SARAWAK BIODIVERSITY COUNCIL

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NOTES TO THE FINANCIAL STATEMENTS
FOR THE FINANCIAL YEAR ENDED 31 DECEMBER 2016

6. Cash and cash equivalents

	2016 RM	2015 RM
Cash and bank balances	2,593,710	3,440,791
Deposit with licensed banks	5,345,917	7,670,000
Deposit with licensed finance companies	21,772,425	23,123,992
	29,712,052	34,234,783

7. Trade and other receivables

	2016 RM	2015 RM
Trade Receivables	1,200	-
Other receivables	10,210	104,223
Interest receivables	548,615	649,329
	560,025	753,552

8. 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:

(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 2016

8. Provision for taxation/Tax expense (cont'd)

	2016 RM	2015 RM
Balance at 1 January	(2,719)	16,979
Current Year Provision	243,347	293,130
Tax Paid	(208,664)	(312,828)
Balance at 31 December	31,964	(2,719)

Taxation

	2016 RM	2015 RM
Current year tax expense	243,347	293,130
Tax paid for current year	(208,664)	(295,849)
Tax (refundable) / payable	34,683	(2,719)

9. General reserve

	2016 RM	Restated 2015 RM
Balance as at 1 January	37,123,210	39,299,731
Net deficit for the year	3,925,980	(2,176,521)
Balance as at 31 December	41,049,190	37,123,210

10. Development funds

	2016 RM	Restated 2015 RM
Balance as at 1 January	14,649,518	16,480,932
Received during the year	6,506,931	4,053,727
Expended during the year	(11,356,309)	(5,885,141)
Balance as at 31 December	9,800,140	14,649,518

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

NOTES TO THE FINANCIAL STATEMENTS
FOR THE FINANCIAL YEAR ENDED 31 DECEMBER 2016

11. Other payables and accruals

	2016 RM	2015 RM
Other payables	342,385	2,394,212
Accruals	191,646	148,095
	534,031	2,542,307

12. Revenue

	2016 RM	2015 RM
Fixed deposit interest income	973,390	1,172,520
Tender document fees	9,500	6,991
Gain on disposal of property, plant and equipment	12,246	-
Other income	44,988	32,871
	1,040,124	1,212,382

13. Government grants

	2016 RM	Restated 2015 RM
Operating grant	5,000,000	2,000,000
Development grant	8,467,044	4,493,277
	13,467,044	6,493,277

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

NOTES TO THE FINANCIAL STATEMENTS
FOR THE FINANCIAL YEAR ENDED 31 DECEMBER 2016

14. Staff cost

	2016 RM	2015 RM
Personnel emolument	5,157,441	4,627,995
Staff incentives	130,101	105,109
EPF	642,846	587,615
SOCSO	65,648	51,268
Overtime	67,855	57,441
Transport and travelling	145,718	273,092
Medical expenses	99,301	107,718
Staff uniform	29,929	62,633
	6,338,839	5,872,871
Number of staff	104	102

NOTES TO THE FINANCIAL STATEMENTS
FOR THE FINANCIAL YEAR ENDED 31 DECEMBER 2016

15. Other operating expenses

	2016 RM	2015 RM
Advertisement	7,536	6,896
Audit fees	5,108	8,512
Bank charges	2,018	1,090
Computer and accessories	76,377	28,353
Consultancy fees	28,532	80,521
Conference and seminar fees	5,610	35,186
Council Members' allowance and sitting fees	79,700	84,400
Electricity charges	279,916	270,284
Entertainment	46,866	37,404
Fuel and lubricant	16,254	19,539
Human resource development expenses	29,153	102,008
Lab consumables	91,877	769,814
Lab maintenance	166,649	298,706
Insurance	47,674	37,783
Market testing & research	123,316	282,679
Motor vehicles road tax	1,488	2,087
Newspapers and magazines	6,945	17,575
Office expenses	145,279	102,356
Office maintenance	282,440	155,060
Postage and courier	17,412	26,168
Printing and stationery	31,904	23,430
Repairs and maintenance - motor vehicles	15,121	24,998
Telecommunication and internet charges	52,291	46,387
Unclaimable good and services tax (GST)	449	23,239
Water charges	6,723	14,329
	1,566,638	2,498,804

NOTES TO THE FINANCIAL STATEMENTS
FOR THE FINANCIAL YEAR ENDED 31 DECEMBER 2016

16. Capital commitments

Approved capital expenditure and contracted for in the financial statement as at 31 December 2016 is RM1.34 million (Year 2015: Nil).

17. Authorisation for issue of the financial statements

The financial statements of the Sarawak Biodiversity Council (Council) were authorized for issue by the Council Members during the Council Meeting held on 19th April 2017.

KM20, JALAN BORNEO HEIGHTS, SEMENGOH, LOCKED BAG NO. 3032, 93990 KUCHING, SARAWAK, MALAYSIA

TEL: +6 082 610610 FAX:+ 6 082 611535

EMAIL: biosar@sbc.org.my WEBSITE: www.sbc.org.my