

SARAWAK BIODIVERSITY CENTRE

ANNUAL REPORT

TRADITIONAL KNOWLEDGE DOCUMENTATION
BIODIVERSITY GARDEN
R&D BIODISCOVERY
AWARENESS & APPRECIATION



Sarawak
Biodiversity Centre

2012

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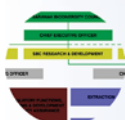
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VISION

To be the centre of excellence for biodiversity research and sustainable utilisation


MISSION

To discover and harness Sarawak's biodiversity resources through research and development for the benefit of Sarawak and mankind

TAGLINE

Biodiversity for a Better Tomorrow



Chairman
Sarawak Biodiversity Council

**YB Datuk Amar Haji Mohamad
Morshidi bin Abdul Ghani**

State Secretary of Sarawak



Deputy Chairman
Sarawak Biodiversity Council

YBhg Dato Sudarsono Osman

*Permanent Secretary,
Ministry of Resource Planning and
Environment*



Secretary
Sarawak Biodiversity Council

Dr Rita Manurung

*Chief Executive Officer,
Sarawak Biodiversity Centre*



Council Member
Sarawak Biodiversity Council

**YA Tuan Haji Abdul Razak
Tready**

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 Dato Haji Misnu bin Haji
Taha**

*Deputy State Secretary
Administration, Security and Corporate
Affairs*



Council Member
Sarawak Biodiversity Council

Tuan Haji Ali bin Yusop

*Director of Forests/Controller of
Wildlife*



Council Member
Sarawak Biodiversity Council

Mr Peter Sawal

*Controller,
Natural Resources & Environment
Board (NREB)*



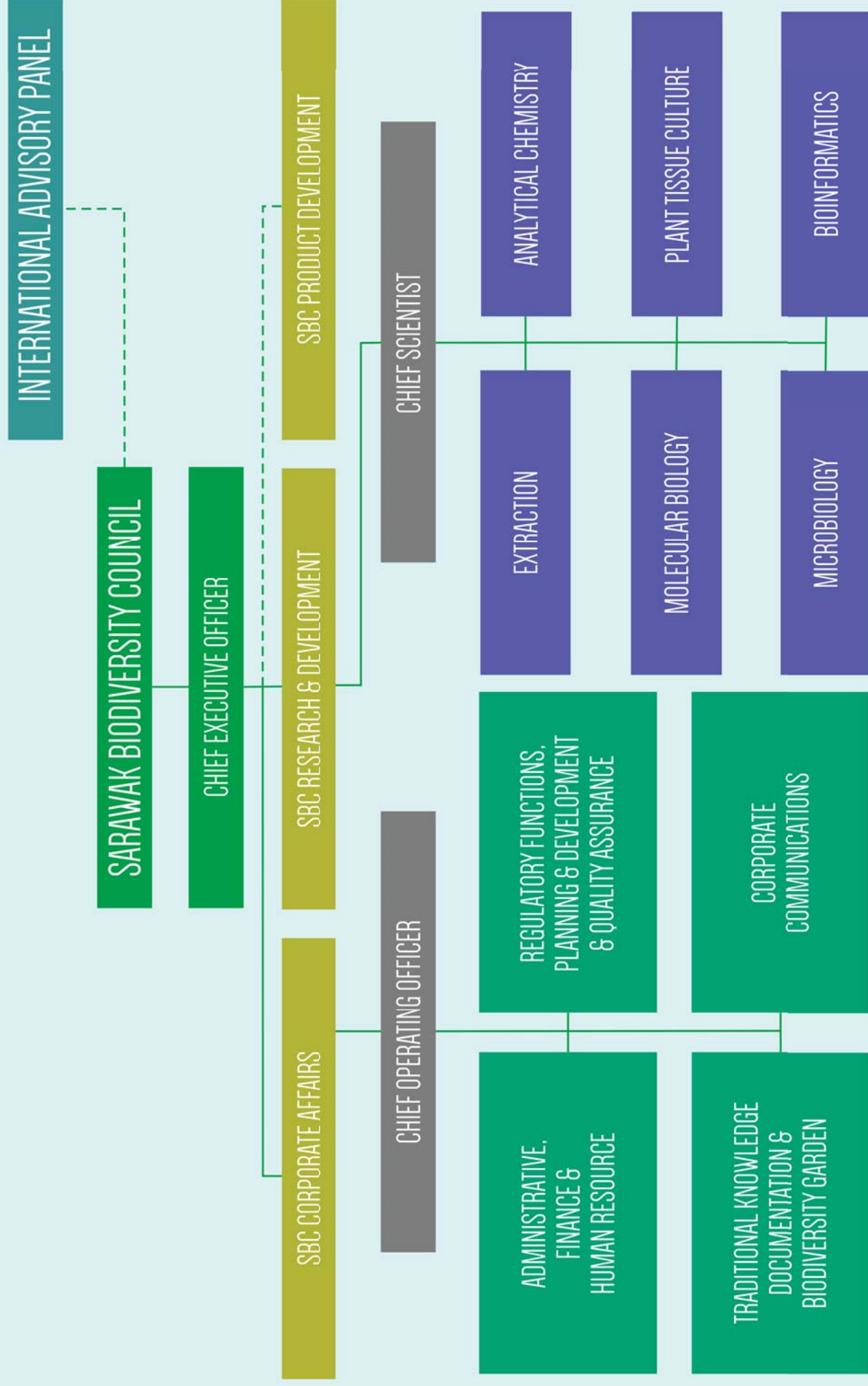
Council Member
Sarawak Biodiversity Council

Mr Lai Kui Fong

Director of Agriculture




SBC ORGANIZATION STRUCTURE



R&D PROGRAMME

BIOPROSPECTING



SBC's R&D Project focuses on making discoveries in biological resources that would lead to the development of herbal therapies, nutraceuticals, cosmaceuticals for health-care and pharmaceutical drugs for countering diseases such as cancer and infectious agents. The programme also aims to discover chemicals and enzymes from our biological resources that would be useful over a broad range of applications as industrial related products such as essential oils, bio-pesticides and commercial dyes.

The R&D Project is supported by the establishment of 7 well-equipped and specialized laboratories (extraction, biochemistry, microbiology, molecular biology, plant tissue culture, analytical chemistry and bioinformatics-see *Bioinformatics Project*), staffed with trained scientists who work in a conducive environment intended for innovative research focusing on the biodiversity.

With its R&D facilities and a systematic approach to research on biodiversity in Sarawak, SBC is able to provide the State with the means to bioprospect its biodiversity through R&D and share the benefits made from the discoveries with the people. The discoveries will consequently provide a pipeline of bio-products for the bioindustry to jump-start and generate future economical returns and revenues for the State.

PROJECT OBJECTIVES

- To establish a unique library of natural products from useful plants and microbes
- setup facilities and acquire biotechnology techniques for setting up bioassays
- To screen for anti-cancer, anti-fungal, anti-bacteria, anti-inflammation and anti-protease compounds from our natural products library
- To screen for lipase activity and immunomodulatory proteins/compounds from natural product library
- To isolate and sequence genes from useful microbes that have medicinal and industrial applications
- To develop plant tissue culture capabilities for mass propagation and genetic transformation
- To develop analytical skills for structural determination of bioactive compounds
- To train and develop the State's human resources in the field of biotechnology
- To attract scientific collaboration and investments from biotech/pharmaceutical companies
- To assist in the development of the bioindustry in the State by providing potential

bio-products for commercialization

NATURAL PRODUCT LIBRARY

The Natural Product Library (NPL) serves as a scientific platform for SBC's R&D Programme and research collaborations. The library consists of extracts from plants and microbes which are systematically collected and screened in-house or provided to collaborators to be screened for various kinds of bioactivities including cytotoxicity activity, anti microbial properties and chemical ingredients that are useful for cosmetic and nutritional products. SBC's collaborators consist of academicians, research institutions, biotech, pharmaceutical, food and flavour companies.

The infographic on page 6 shows the number of extracts collected and accumulated each year in the natural products library from plants and microbes.

NATURAL PRODUCT LIBRARY

THE NUMBER OF EXTRACTS FROM PLANTS AND MICROBES



PLANTS

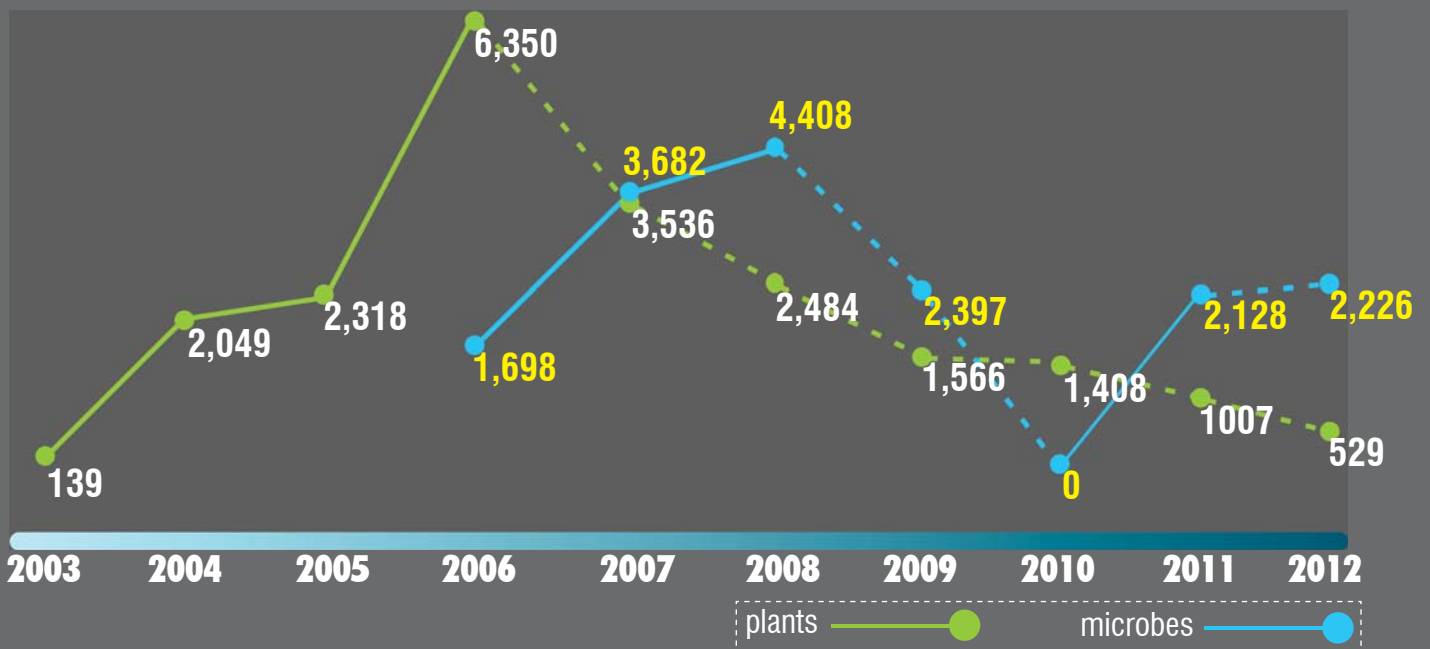
YEAR	TOTAL
2003	139
2004	2,188
2005	4,506
2006	10,856
2007	14,392
2008	16,876
2009	18,442
2010	19,850
2011	20,857
2012	21,386



MICROBES

YEAR	TOTAL
2003	-
2004	-
2005	-
2006	1,698
2007	5,380
2008	9,788
2009	12,185
2010	12,185
2011	14,313
2012	16,539

YEARLY PERFORMANCE



In 2012, SBC achieved a total accumulative number of **21,000** and **16,500** extracts from plants and microbes respectively. The number of **plant extracts** fell short because the majority of the effort was dedicated to bulk extracts for PepsiCo and other collaborators. The number of microbe extracts however exceeded the projected figure of 16,315.

R&D PROJECTS AND COLLABORATIONS

ANTI-CANCER COMPOUND SCREENING ON PLANT EXTRACTS

SBC carries out routine screening of plant extracts from its NPL for bioactive compounds that kill cancer cells in the hope of development anti-cancer drug candidates.

SILVESTROL PROJECT

The Sarawak Biodiversity Centre signed a collaboration and license agreement with the Ohio State University on 16 June 2012 to carry out further research on the Silvestrol compound isolated from the fruits and twigs of *Aglaia stellatopilosa*. The compound, has been found to exhibit potent activity against several human cancer cell lines.

PHOTODYNAMIC COMPOUNDS PROJECTS (CANCER RESEARCH INITIATIVES FOUNDATION-CARIF)

In Year 2005, SBC and CARIF began a collaboration in 2005 to isolate and screen compounds from Sarawak's biodiversity that have photodynamic properties for cancer therapy. In November 2012, the first peer-reviewed paper with regards to results of the screening was published in the journal "Chemistry & Biodiversity". The paper entitled "**Photodynamic Activity of Plant Extracts from Sarawak Borneo**" was written by SBC's Research Officers lead by Jong Wan Wui and researchers from CARIF.

MICROBIOLOGY

In year 2012, a total of 1,342 actinomycetes and 1,542 fungal strains with extracts (Actinomycetes: 1,002 and fungi: 1,640) were deposited in the SBC Microbial Library.

The total cumulative number of actinomycetes and fungi strains in the library from year 2006 to year 2012 has reached 10,407 and 5,157 respectively.

The number of extracts for actinomycetes and fungi accumulated from year 2006 to year 2012 are 11,321 and 5,525.

In antimicrobial bioassay, out of the 9,763 actinomycetes extracts and 3,674 (as of July 2013) fungal extract screened, 4,316 and 2,154 hits were detected through primary screening of actinomycetes and fungal extracts respectively against at least four standard test strains. (of Gram positive, Gram negative, yeast and fungi origin). **not all extracts are screened as some were prepared for collaboration purposes only.*

The following projects are carried out under SBC's Microbiology programme:

MICROBIAL BIOPROSPECTING IN COLLABORATION WITH NIMURA GENETIC SOLUTIONS

The collaboration which ended in year 2012, resulted in a collection of 13,000 microbial extracts and capacity building of SBC's researchers.

DISCOVERY OF A NOVEL FUNGUS WITH INHIBITORY BIOACTIVITY

The isolation and characterization of a new fungus called F0274 was initially done by SBC's Research Officer, Noreha binti Mahidi. This fungus makes an inhibitor to an enzyme called endopeptidase which is implicated in neuro-degenerative diseases. Ng Lee Tze, a research officer who pursued her PhD at Swinburne University of Technology Sarawak, has established a fermentation methodology to produce scale up quantities of inhibitors from F0274 in a fermentation system at SUTS. The research work on F0274 is currently being done at SBC to isolate the compound to determine if it is novel.

MYXOBACTERIA PROJECT WITH NOVARTIS AG

SBC started collection and isolation of myxobacteria in 2010 and currently collected about 30 strains of myxobacteria for the Natural Product Library for collaboration. Myxobacteria has been shown to be a good producers of bioactive compounds and are sought after by pharmaceutical companies for drug discovery screening. Under a collaborative MOU with Novartis AG, SBC's Research Officer, Ann Basik, has been selected to do an internship at Basel in February 2013. Her training will be partly on myxobacteria.

ANTI TUBERCULOSIS(TB) PROJECT WITH TEXAS A&M UNIVERSITY

SBC is collaborating with Texas A&M University (TAMU) to screen for bioactive compounds that can be developed as an anti-TB agent.

DISCOVERY OF NEW *Muscodor* SPECIES

Noreha, who is also pursuing her PhD at SUTS used a standard strain of *Muscodor albus* donated by Dr. Gary Strobel of University of Montana. She has successfully isolated 10 strains of *muscodor*-like fungus from Sarawak. The importance of this type of fungus is in their capability to make volatile gases which can inhibit or kill other micro-organisms including agriculture relevant plant pathogens. Therefore, this type of fungus can be utilized as a bio-control agent.



R&D PROJECTS AND COLLABORATIONS

OTHER COLLABORATIVE PROJECTS

ANTI-INFLAMMATORY PROJECT WITH CENAR, UNIVERSITY OF MALAYA

SBC is also collaborating with Center for Natural Products and Drug Research (CENAR), Universiti Malaya, to isolate anti-inflammatory compounds from Sarawak's plants.

DEVELOPING PHARMACOPHORES OF SILVESTROL (UNIVERSITY OF STRATHCLYDE)

A collaboration with University of Strathclyde to design pharmacophores of silvestrol using computational chemistry to identify leads for pharmaceutical development was also ongoing in year 2012.

ANTI VIRAL PROJECT AND ANTI-HELMINTHIC PROJECT WITH ENVIRONMENT BIOTECHNOLOGY CENTRE, SWINBURNE UNIVERSITY OF TECHNOLOGY, AUSTRALIA

SBC also collaborated with the Environment and Biotechnology Centre (EBC) at Swinburne University of Technology, Australia, to screen for bioactive compounds against viruses including influenza, dengue, rotavirus and enterovirus.

Other than anti-virals, the EBC is also screening selected plant and microbial extracts from SBC's NPL for anti-helminthic activities. Infectious worms are helminthes which cause gastrointestinal diseases in humans and livestock.

PAHKAK ESSENTIAL OIL PROJECT

The Pahkak Essential Oil Project is a collaboration between the community of Kampung Kiding, Padawan, Dr. Lars Bjork, Uppsala University, and SBC. Pahkak essential oil has been shown to be effective as an anti-microbial and also, an insect repellent. The project is a collaboration to develop repellents, oral care and household products from the essential oil. In year 2011, the Malaysian Intellectual Property Organisation (MyIPO) granted Geographical Indication for the plant Litsea cubeba. The GI is known as Sarawak Litsea while a Trademark for the essential oil derived (LitSara®) was also granted at the same time. SBC is also exploring other uses of Pahkak oil in household items and toiletry items for the hospitality industry.

COSMETIC INGREDIENTS FROM BIODIVERSITY WITH AT LAB, KOREA

AT Lab, a cosmetic research company from Korea has entered into a collaboration with SBC to screen natural products from SBC's natural product library that could be used as cosmetic ingredients.



YALE UNIVERSITY

Yale University has isolated 239 endophytes from the plant samples that were collected under the research agreement with SBC. These endophytes will be sent to SBC for depository. Yale also sends students to undergo internship at SBC. In year 2012, Mr. William Zhao from Yale University carried out his internship and research work on isolation of endophytes from anti-malaria plants. Mr. Zhao was at SBC from 16 June-17 August 2012.

SLOAN KETTERING INSTITUTE (MEMORIAL SLOAN KETTERING CANCER CENTER)

SBC also has an ongoing screening collaboration with the Sloan Kettering Institute – the world's oldest and largest private cancer center, located in New York, USA where plants and microbial extracts from SBC's NPL are being screened.

SlgN (SINGAPORE IMMUNOLOGY NETWORK)

SBC and SlgN have undertaken an agreement to screen plants and microbial extracts for anti chikungunya and anti-malaria activities.

**OTHER
COLLABORATIVE PROJECTS**

TK DOCUMENTATION PROGRAMME

The Sarawak Biodiversity Centre (Amendment) Ordinance entrusts SBC to facilitate Traditional Knowledge (TK) Documentation of the knowledge and practice relating to the uses and management of biodiversity among the many indigenous communities in the State. This is carried out through its TK Documentation Programme and implemented by carrying out creating awareness, capacity building and documentation activities facilitated by SBC.



In Year 2012, SBC conducted two (s) Consultative Meetings at the Nanga Medamit Sub-district and the Merapok Area in Lawas.

Within the same year, SBC had also conducted the 1st Traditional Knowledge Documentation Workshops at :

- Kampung Sual for Iban and Malay Communities within Simunjan Area
- Rh Ajan for Iban, Kedayan and Lun Bawang Communities within Merapok Area, Lawas
- Rh Bajau, Julau, an Iban Community
- Long Amo, Belaga a Kenyah Community
- Nanga Sumpa, Batang Ai, an Iban Community
- Kpg Kuala Medalam, Nanga Medamit, Lawas, a Tabun Community

Since the programme began in Year 2002, SBC has carried out the Traditional Knowledge Documentation Programme among 63 villages/areas in Sarawak with the involvement of 14 ethnic communities). Of these, a total of 40 villages have started the documentation and collection of useful plants.

Until December 2012, the total number of plants documented and collected from these villages is 4,378 plants from 763 species. Taxonomic identification on the plants collected are still ongoing.

Under the programme, SBC has also conducted the following field work under the various projects:

SBC-PEPSICO COLLABORATION

Kpg Semadang 20 December 2011	Kpg Kiding 17-20 January 2012	Kpg Semban 19-22 March 2012
Rh Nyambong 16-19 April 2012	Kpg Jebungan 27-30 May 2012	Pa Lungan & Pa Ukat 11-15 June 2012
Rh Skatap 16-19 July 2012	Long Pelutan 19-23 October 2012	Rumah Changgai & Rumah Emak 8-11 October 2012
Kampung Bangkatan 24-27 September 2012	Long Telingan & Long Kerebangan 6-10 August 2012	

SBC AROMATIC PLANTS INVENTORY PROJECT

Kpg Semadang 4 April 2012	Long Iman 25-27 April 2012	Kpg Kiding 11-14 June 2012
Rh Skatap & Rh Nyambong 16-19 July 2012	Pa Ukat & Pa Lungan 15-19 October 2012	Kampung Jebungan & Kampung Jemoreng 16-19 July 2012

SBC has also collected *Aglaia stellatopilosa* from Pulong Tau National Park in April and October 2012.

OTHER ACHIEVEMENTS

UNDER THE TK DOCUMENTATION PROGRAMME

SBC also conducted a Botany Course with Dr Paul Chai for research officers and selected support staff under the Traditional Knowledge Documentation Programme from 26 to 28 June 2012 and 2 to 3 July 2012. Follow-up courses on plant identification will be conducted with Dr Paul Chai every month.



The team also led the field collections with students under the Montana University 2012 International Summer Research Experience Program to Long Iman (20-24 May 2012) and Kampung Kiding (11-14 June 2012).



The TK Doc team also participated in the Ulu Mentawai Expedition organized Ulu Mentawai Limbang (5-17 September 2012).



From 19-22 November 2012, SBC organized the Traditional Knowledge Documentation Workshop at Long Iman, Mulu, a Penan community. The Workshop was attended by 50 participants which comprised of community participants under the TK Doc Programme (30 persons) and representatives from SFD, SFC, MNRE and FRIM. The programme included speakers from BIOVERSITY International, FRIM, Ministry of Tourism, Annah Rais Homestay and Mulu NP.



1. *Botany Course* conducted by Dr Paul Chai

2. *Field collections* with the students under Montana University 2012 International Summer Research Experience Program to Long Iman and Kpg Kiding

3. *Ulu Mentawai Expedition*

4. *Traditional Knowledge Documentation Workshop* organized by SBC at Long Iman, Mulu

BIODIVERSITY

GARDEN PROGRAMME

The Biodiversity Garden programme is implemented to set up the physical structure of a Nursery in SBC, identify and collect plans to be grown, assess and provide their basic physiological and environmental requirement and to provide plants for SBC's garden and Biodiversity Awareness and Appreciation programme.

Tunek Pale
Acanthaceae
Turcia gendarussa
Pusat Kengah

Kantan
Etlingera elatior
Zingiberaceae



This programme also supports SBC's Traditional Knowledge Documentation Programme, R&D Programme and Awareness and Appreciation Programme.

Emphasis is given on the collection, propagation and planting of Sarawak's indigenous flora, particularly useful plants that are used by the indigenous communities in the State.

ACHIEVEMENTS FOR YEAR 2012

For Year 2012, the number in SBC's Laila Taib Ethnobotanical Garden reached 618 types of plants by the year's end and these included plants used by the local communities, common-use plants and ornamental plants - 482 plants (288 species) used by local communities and 120 common useful plants (94 species).- the number of plant decrease as some plants are old and removed.

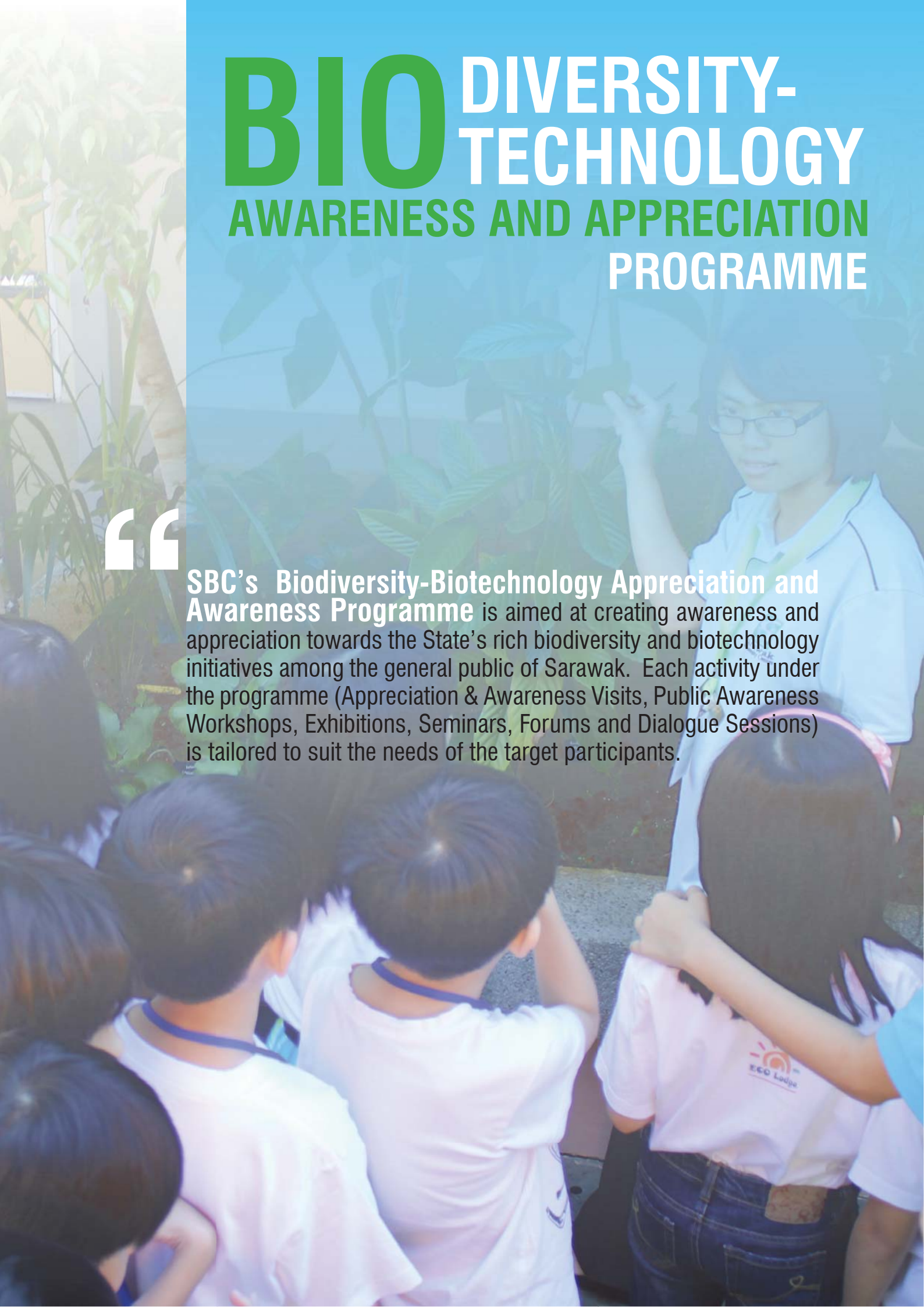
SBC also carries out propagation of plants needed for the ethnobotanical garden, as well as for bulk raw material for SBC's R&D laboratories. The number of plants propagated at the end of Year 2012 stood at 44,757 plants.



BIO DIVERSITY- TECHNOLOGY AWARENESS AND APPRECIATION PROGRAMME

“

SBC's Biodiversity-Biotechnology Appreciation and Awareness Programme is aimed at creating awareness and appreciation towards the State's rich biodiversity and biotechnology initiatives among the general public of Sarawak. Each activity under the programme (Appreciation & Awareness Visits, Public Awareness Workshops, Exhibitions, Seminars, Forums and Dialogue Sessions) is tailored to suit the needs of the target participants.



SBC received 22 appreciation visits from schools, institutes of higher learning and another 34 visits from and governmental and non-governmental organisations. SBC also organised twenty public awareness talks, one seminar, one dialogue session and participated in six exhibitions throughout year 2012.

The complete listing of activities carried out under SBC's Awareness and Appreciation Programme is attached as Appendix 1.

2012

AWARENESS AND APPRECIATION ACTIVITIES

AWARENESS VISITS

22 schools/organizations | **830** participants



see Appendix 1 Table 1

PUBLIC LECTURES

20 talks/lectures | **1045** participants



see Appendix 1 Table 2

SEMINAR, FORUMS, DIALOGUE

2 seminars | **245** participants



see Appendix 1 Table 3

EXHIBITION PARTICIPATIONS

6 exhibitions



see Appendix 1 Table 4

CORPORATE VISITS

34 organizations



see Appendix 1 Table 5

OTHER ACTIVITIES

13 activities



see Appendix 1 Table 7

PUBLICATIONS

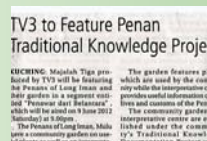
61 articles

24 - The Star

17 - The Borneo Post

14 - New Sarawak Tribune

6 - Other



see Appendix 1 Table 6

HIGHLIGHT EVENTS



SPECIAL FEATURE ON THE PENAN COMMUNITY OF LONG IMAN, MULU



From 8 May 2012 to 16 May 2012, SBC organized a trip for Media Prima (TV3) to film the Traditional Knowledge Documentation Project with the Penan Community of Long Iman, Mulu, Majalah 3 and SBC's Research Activities. The film was telecast on 9 June 2012 on TV3's Majalah 3.

SBC BIODIVERSITY DAY 2012

On 25 May 2012, SBC organised a Biodiversity Day, in conjunction with the United Nation's International Day of Biological Diversity observed annually on 22 May.

During the one-day event, SBC lined up several activities which included a colouring contest and pottery painting contest for primary school children. Secondary school students were also not left out as some received their prizes for the Biodiversity Essay Contest which was also held in conjunction with the event.



The Star Sarawak was the media partner for the Biodiversity Day. The following Public Awareness Talks were also held during the event:

- Biodiversity: Our Life, Our Heritage by Mr Nagulendran Kangayatkarasu, Ministry of Natural Resources & Environment
- Irrawaddy Dolphins in Sarawak by Mr James Ak Bali, Sarawak Forestry Department
- Corals of Sarawak by Associate Professor Dr Lee Nyanti, UNIMAS

INDIGENOUS AMERICA TO INDIGENOUS BORNEO PROGRAMME



From 17 May -16 July 2012, three students and two supervisors from various universities in the USA participated in the Indigenous America to Indigenous Borneo (IAIB) Programme.

The IAIB programme was the brainchild of Dr Michael Ceballos, an Assistant Professor of Biology at the University of Minnesota (Morris Campus) in the US. He founded the Native American Research Labs, which provide advanced “hands-on” training to Indigenous American scholars interested in pursuing careers in the natural sciences.

The students, Leanne Falcon (University of Montana), Alyssa Byrd (City College San Francisco) and Mintzi Martinez Rivera (Indiana University) were attached to the R&D and Traditional Knowledge Documentation programmes in SBC.

They were supervised by Dr. Ceballos and Dr. Yolanda Trevino (Indiana University) and mentored by SBC’s officers.



TRADITIONAL KNOWLEDGE DOCUMENTATION WORKSHOP, LONG IMAN, MULU



SBC's annual Traditional Knowledge Documentation (TK Doc) Workshop for year 2012 was held at Long Iman, Mulu. The Penan Community of Long Iman, lead by Resen Yu were instrumental in the organisation of the workshop.

The Workshop was attended by 50 participants. These were made up of which 30 community participants under the TK Doc Programme from throughout Sarawak, and representatives from SFD, SFC, MNRE and FRIM.

The programme included speakers from BIOVERSITY International, FRIM, Ministry of Tourism, Annah Rais Homestay and Mulu National Park and encompassed topics such as designing a homestay programme, besides TK Documentation.

SBC – NOVARTIS

COLLABORATIVE EXHIBITION AND CONFERENCE TRACK AT BIOMALAYSIA 2012

Since its inception in 2005 BioMalaysia has grown to be Malaysia's premier and largest biotechnology conference & exhibition in the region. The annual event is jointly organized by the **Ministry of Science, Technology & Innovation (MOSTI)**, **Malaysian Biotechnology Corporation Sdn Bhd (BiotechCorp)** and PROTEMP Group.

The Sarawak Biodiversity Centre's (SBC) participation in the BioMalaysia Conference and Exhibition held from 5-7 November at the Kuala Lumpur Convention Centre highlighted the Centre's collaboration with pharmaceutical company Novartis on scientific training and rare actinomycetes research.

The collaboration was brought to life at BioMalaysia 2012 through a conference track dedicated to the works of the Sarawak Biodiversity Centre and Novartis, as well as a joint SBC-Novartis Exhibition booth.

The SBC-Novartis conference track featured two key topics: Natural Substances: From Scientific Discovery to Market Success; Market Success and Financing Biotech.

Minister of Science Technology and Innovation, Datuk Seri Panglima Dr. Maximus Johnnity Ongkili was present at the conference track which featured notable speakers from Novartis.

Among these speakers were, Mr Alexandre Jetzer-Chung, Member Emeritus of the Board of Directors, Novartis AG; Dr Frank Petersen the Executive Director of Natural Products Unit, Switzerland; Dr Philipp Krastel the Group Leader for Novartis Natural Products Unit in Switzerland; and Dr Bryan Yeung, Associate Director for the Malaria Programme, Novartis Institute for Tropical Diseases in Singapore.



SBC's Senior Research Officer Dr Yeo Tiong Chia presented a paper entitled "Building a Discovery Partnership with a Major Pharma" during the conference track which featured SBC's collaboration with Novartis on microbial discoveries.

The joint SBC- Novartis Exhibition Booth meanwhile featured five posters and information on SBC's collaborative work with Novartis, and also information on the Novartis Venture Fund.

Deputy Prime Minister of Malaysia, Tan Sri Muhyiddin Yassin visited the booth during the official launch of the event and was given an overview of the collaborative work by Dr Rita Manurung, CEO of SBC and Ms Lily Lee, Head of Commercial Operations and Market Access for Novartis Corporation in Malaysia.



EXCHANGE OF DOCUMENT ON SBC – MISTUBISHI CORPORATION MOU AT BIOMALAYSIA 2012

A highlight for Sarawak during the official opening of the BioMalaysia Exhibition 2012, was the exchange of documents for a Memorandum of Understanding between SBC and Mitisubishi Corporation.

The exchange of documents were witnessed by Deputy Prime Minister, Tan Sri Muhyiddin Yassin. Yang Berbahagia Datu Haji Misnu bin Haji Taha, Deputy State Secretary of Sarawak and Sarawak Biodiversity Council Member and Mr. Koichi Wada, the Chief Executive in Malaysia for Mitsubishi Corporation exchanged the MOU on behalf of SBC and Mitsubishi Corporation respectively.

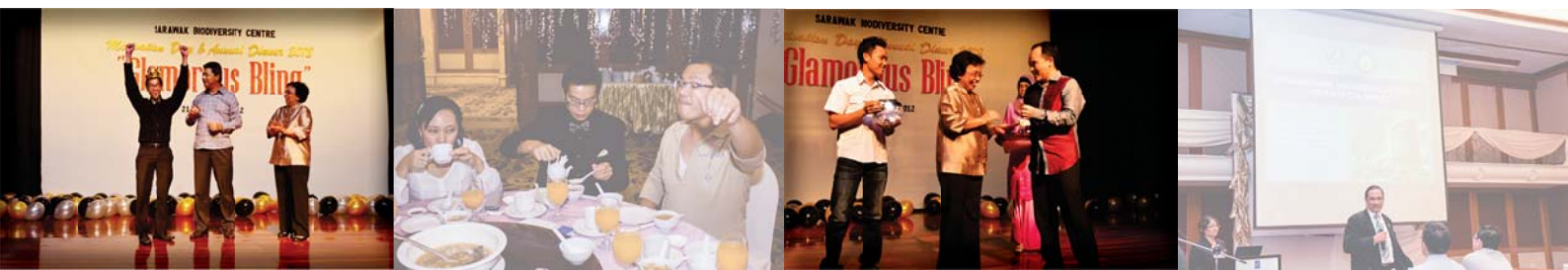
Under the MOU, Mitsubishi Corporation (MC) and SBC will explore the diverse algal biodiversity of Sarawak as a potential source of renewable energy. The parties will hold joint scientific expeditions through SBC to explore the unique ecosystems in the waters of Sarawak and collect, isolate and study microalgae species. The isolated microalgae will be identified using molecular techniques, cultured for detailed research and analyzed to generate a database as well as an algae library.

The parties plan to test the cultures to identify its useful biological characteristics as biomass or feedstock for biofuels and ‘co-products’ that may have applications as food and health supplements.



PICTORIALS 2012

SBC MOTIVATION DAY & DINNER



SBC TEAM BUILDING



SBC Motivation Day & Annual Dinner - 21 September 2012
SBC Team Building - 29 November-2 December 2012

PICTORIALS 2012

82576
0913
279
10
4

**FINANCIAL STATEMENTS FOR THE YEAR ENDED
2012**

+
\$ %
- X /
+ RM X

BALANCE SHEET AS AT 31 DECEMBER 2012

	2012 RM	2011 RM
NON-CURRENT ASSETS		
Property, plant & equipment	7,316,519	8,412,610
CURRENT ASSETS		
Cash and bank balances	678,250	2,427,544
Fixed Deposits	41,853,738	37,641,694
Other receivables	1,025,042	634,538
Tax Refundable	-	52,555
	<u>43,557,030</u>	<u>40,756,331</u>
CURRENT LIABILITIES		
Other payables and accruals	615,899	239,231
Provision for taxation	61,158	74,587
	<u>677,057</u>	<u>313,818</u>
NET CURRENT ASSETS	42,879,973	40,442,513
	<u>50,196,492</u>	<u>48,855,123</u>
FINANCED BY:		
General reserve	40,145,020	39,730,835
Development grants	4,510,348	2,707,364
	<u>44,655,368</u>	<u>42,438,199</u>
NON-CURRENT LIABILITIES		
Deferred income	5,541,124	6,416,924
	<u>50,196,492</u>	<u>48,855,123</u>

INCOME STATEMENT
FOR THE YEAR ENDED 31 DECEMBER 2012

	2012	2011
	RM	RM
Revenue	2,069,705	1,088,314
Government Grant	5,000,000	7,000,000
Transferred from Deferred Income	<u>1,236,279</u>	<u>1,421,945</u>
	8,305,984	9,510,259
Staff Cost	(4,513,112)	(4,095,945)
Depreciation of Property, Plant & Equipment	(1,498,975)	(1,672,604)
Other Operating Expenses	<u>(1,551,211)</u>	<u>(1,942,624)</u>
Surplus before taxation	742,686	1,799,086
Taxation	<u>(328,501)</u>	<u>(267,343)</u>
Net surplus after taxation	<u><u>414,185</u></u>	<u><u>1,531,743</u></u>

STATEMENT OF CHANGES IN EQUITY
FOR THE YEAR ENDED 31 DECEMBER 2012

	Development Grants RM	General Reserve RM	Total RM
Balance as at 1 January 2011	2,334,411	38,199,092	40,533,503
Received during the year	1,000,000	-	1,000,000
Expended during the year	(627,047)	-	(627,047)
Surplus for the year	-	1,531,743	1,531,743
Balance as at 31 December 2011	2,707,364	39,730,835	42,438,199
Received during the year	3,935,421	-	3,935,421
Expended during the year	(2,132,437)	-	(2,132,437)
Surplus for the year	-	414,185	414,185
Balance as at 31 December 2012	4,510,348	40,145,020	44,655,368

CASH FLOW STATEMENT
FOR THE YEAR ENDED 31 DECEMBER 2012

	Note	2012 RM	2011 RM
<u>CASH FLOW FROM OPERATING ACTIVITIES</u>			
Surplus before tax		742,686	1,799,086
Adjustments for the items not involving the movements of cash and cash equivalents			
Depreciation of Property, Plant & Equipment	4	1,498,975	1,672,604
Interest income		(1,069,371)	(1,069,371)
Loss on disposal of Property, Plant & Equipment		1,385	2,005
Transfer from deferred income		(1,236,279)	(1,421,945)
Operating (loss)/profit before working capital changes		(62,604)	982,379
Increase in other receivables		(390,504)	(150,391)
Increase/(Decrease) in other payables		376,668	(182,211)
Cash (used in)/generated from operation		(76,440)	649,777
Income tax refunded		52,555	-
Income tax paid		(341,930)	(204,210)
Net cash (used in) generated from operating activities		<u>(365,815)</u>	<u>445,567</u>
<u>CASH FLOW FROM INVESTING ACTIVITIES</u>			
Purchase of Property, Plant & Equipment		(43,790)	(245,047)
Development grant received		3,935,421	1,000,000
Development expenditure		(2,132,437)	(627,047)
Other income		1,069,371	1,069,371
Net cash used in investing activities		<u>2,828,565</u>	<u>1,197,277</u>
Net decrease in cash and cash equivalents		2,462,750	1,642,844
Cash and cash equivalents at beginning of the year		40,069,238	38,426,394
Cash and cash equivalents at end of the year	5	<u>42,531,988</u>	<u>40,069,238</u>

NOTES TO THE FINANCIAL STATEMENTS

1. Corporate Information And Principal Activities

The Sarawak Biodiversity Centre (SBC) is a Sarawak State Government – owned statutory body incorporated in 1997 and its vision is “to be the focal point and a resource centre for Sarawak Biodiversity inventory, monitoring, research, education, utilization, management and conservation”.

On 8 December 2003, the State Legislative Assembly passed the Sarawak Biodiversity Centre (Amendment) Ordinance 2003 which came into force on 1 April 2004. With the amendments, SBC is entrusted with the following statutory functions:

- **conduct Bioprospecting/R&D Programme** on the biodiversity of the State;
- **implement the Traditional Knowledge Documentation Programme** among the traditional communities in the State;
- **establish a database** on information related to the biological resources of the State; and
- **play a role in raising public awareness** on the potential usage and value of the State's biodiversity.

The financial statements of the Centre were authorized for issue by the Council Members in accordance with a resolution of the Council Members on 10 April 2013.

2. Financial Risk Management Policies

The Centre's financial risk management policy seeks to ensure that adequate financial resources are available for the development of the Centre's activities whilst managing its risk.

The main risk arising from the Centre's financial instruments are interest rate risk, credit risk, liquidity risk and foreign currency risk. The Centre's reviews and agreed policies for managing each of these risks are summarized as below:

(a) Interest Rate Risk

The Centre has no borrowings. Surplus funds are placed with reputable banks.

2. Financial Risk Management Policies (cont'd)

(b) Credit Risk

Credit risk is managed through the application of credit approvals and monitoring procedures.

(c) Liquidity Risk

The Centre monitors and maintains a level of cash and cash equivalent deemed adequate by management to finance the Centre's operations and mitigate the effects of fluctuations in cash flows.

The Centre relies heavily on Government Grant and as such liquidity and cash flow risk is very much dependent on availability of government assistance.

(d) Fair Value

Fair value is defined as the amount at which the financial instrument could be exchanged in a current transaction between knowledgeable willing parties in an arm's length transaction, other than in forced or liquidation sale.

The fair values of the financial assets and liabilities approximate their carrying values.

3. Significant Accounting Policies

(a) Basis of Accounting

The financial statements of SBC are prepared under the historical cost convention and in compliance with applicable Private Entities Reporting Standards issued or adopted by Malaysian Accounting Standards Board (MASB), Statutory Bodies (Financial and Accounting Procedure) Ordinance 1995 and Treasury Instruction.

(b) Property, Plant and Equipment

Property, plant and equipment are stated at cost less accumulated depreciation and impairment loss. Depreciation is computed monthly, principally by the straight-line method based on the estimated useful life of the related assets. The rates of depreciation are as follows: -

Research lab building	5% p.a.
Office equipment	15% p.a.
Furniture 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.

3. Significant Accounting Policies (cont'd)

(b) Property, Plant and Equipment

Specialised equipment (computer)	20% p.a.
Specialised equipment (software)	20% p.a.
Lab equipment	15% p.a.
Lab furniture & fittings	10% p.a.
Motor vehicles	20% p.a.
Nursery sheds	10% p.a.

(c) Operating Grant

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

(d) Development Grants

The Centre 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 Centre, 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.

(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 recognized 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 recognized in prior years is recorded when there is an indication that the impairment loss recognized for an asset no longer exists or has decreased. The reversal is recorded in income or as a revaluation increase.

3. Significant Accounting Policies (cont'd)

(f) Deferred Income

Government grants in respect of the acquisition of property, plant and equipment are credited to the deferred income and released to the Income Statements on straight line basis over the expected useful lives of the assets.

(g) Employee Benefits

(i) Short-Term Benefits

Wages, salaries, bonuses and social security contributions are recognized as expenses in the year in which employees of the Centre 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

As required by law, the Centre makes contributions to the Employee Provident Fund. Such contributions are recognized as an expense in the income statement as incurred.

(h) Financial instrument

Financial instruments are recognized in the balance sheet when the Centre has become a party to the contractual provisions of the instrument. The particular recognition methods are dissolved below:-

(i) Other Receivable

Other receivables are carried at anticipated realizable 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 balance sheet 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.

(i) Revenue recognition

Revenue is recognized when it is probable that the economic benefits associated with transaction will flow to the Centre and the amount of the revenue can be measured reliably.

(i) Interest income are recognized on a time proportion basis that reflects the effective yield on the asset.

(ii) Other income are recognized at the point of receipt or sales by the Centre.

4. Property, plant and equipment

2012	Furniture																					
	Office		Fixtures & fittings		Computers		Office Renovations		Motor Vehicle		Specialised Equipment		Temporary Office		Nursery Sheds		Lab Specialised Equipment		Lab Furniture & Fittings		Total	
	RM	RM	RM	RM	RM	RM	RM	RM	RM	RM	RM	RM	RM	RM	RM	RM	RM	RM	RM	RM	RM	RM
Cost																						
Beginning of year	6,783,319	515,269	400,064		725,719	502,649	715,581	131,000	378,473	94,068	7,564,471	614,480										18,425,093
Additions	-	10,961	31,550		87,602						259,437	14,720										404,270
Disposals	-	(11,790)	-		(40,321)			(20,170)			(17,208)	(620)										(90,109)
End of Year	6,783,319	514,440	431,614		773,000	502,649	715,581	110,830	378,473	94,068	7,806,700	628,580										18,739,254
Accumulated Depreciation																						
Beginning of year	1,662,209	343,638	159,258		473,591	210,216	519,887	130,959	378,472	19,114	5,699,201	415,938										10,012,483
Additions	339,166	55,203	33,246		98,619	49,665	62,966			9,406	788,111	62,593										1,498,975
Disposals		(11,784)	-		(38,949)			(20,167)			(17,205)	(618)										(88,723)
End of Year	2,001,375	387,057	192,504		533,261	259,881	582,853	110,792	378,472	28,520	6,470,107	477,913										11,422,735
Net Book Value	4,781,944	127,383	239,110		239,739	242,768	132,728	38	1	65,548	1,336,593	150,667										7,316,519
at end of year																						

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

2011	Furniture											
	Buildings		Office Equipment	Office Fixtures & fittings	Computers	Office Renovations	Motor Vehicle	Specialised Equipment	Temporary Office	Nursery Sheds	Specialised Equipment	Furniture & Fittings
	RM		RM	RM	RM	RM	RM	RM	RM	RM	RM	RM
Cost												Total RM
Beginning of year	6,783,319	450,711	362,364	683,333	502,649	546,147	131,000	378,473	94,068	7,403,841	614,480	17,950,385
Additions	-	68,278	37,700	42,386	-	169,434	-	-	-	175,655	-	493,453
Disposals	-	(3,720)	-	-	-	-	-	-	-	(15,025)	-	(18,745)
End of Year	6,783,319	515,269	400,064	725,719	502,649	715,581	131,000	378,473	94,068	7,564,471	614,480	18,425,093
Accumulated Depreciation												
Beginning of year	1,323,043	297,482	125,992	384,848	160,551	470,510	130,959	378,472	9,707	4,721,554	353,500	8,356,618
Additions	339,166	49,373	33,266	88,743	49,665	49,377	-	-	9,407	991,169	62,438	1,672,604
Disposals	-	(3,217)	-	-	-	-	-	-	-	(13,522)	-	(16,739)
End of Year	1,662,209	343,638	159,258	473,591	210,216	519,887	130,959	378,472	19,114	5,699,201	415,938	10,012,483
Net Book Value at end of year	5,121,110	171,631	240,806	252,128	292,433	195,694	41	1	74,954	1,865,270	198,542	8,412,610

5. Cash and cash equivalents

	2012 RM	2011 RM
Cash and bank balances	678,250	2,427,544
Deposit with licensed banks	15,960,799	12,561,790
Deposit with licensed finance companies	25,892,939	25,079,904
	<u>42,531,988</u>	<u>40,069,238</u>

6. Other receivables

	2012 RM	2011 RM
Other Receivables	370,827	13,910
Interest Receivables	654,215	620,628
	<u>1,025,042</u>	<u>634,538</u>

7. Tax Refundable/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 Centre 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.

	2012	2011
	RM	RM
Balance at 1 January	52,555	52,555
Tax refunded in current year	(52,555)	-
Balance at 31 December	<u>-</u>	<u>52,555</u>

Provision for Taxation

	2012	2011
	RM	RM
Balance at 1 January	74,587	11,454
Current Year Provision	328,501	267,343
Tax Paid	(341,930)	(204,210)
Balance at 31 December	<u>61,158</u>	<u>74,587</u>

Taxation

	2012	2011
	RM	RM
Current year tax expense	328,501	267,343
Under provision in respect of prior year	-	-
	<u>328,501</u>	<u>267,343</u>

8. Other payables and accruals

	2012	2011
	RM	RM
Other Payables	19,970	53,642
Accruals	595,929	185,589
	<u>615,899</u>	<u>239,231</u>

9. General reserve

	2012	2011
	RM	RM
Balance as at 1 January	39,730,835	38,199,092
Net Surplus for the year	414,185	1,531,743
Balance as at 31 December	<u>40,145,020</u>	<u>39,730,835</u>

10. Development grant

	2012	2011
	RM	RM
Balance as at 1 January	2,707,364	2,334,411
Received during the year	3,935,421	1,000,000
Expended during the year	(2,132,437)	(627,047)
Balance as at 31 December	<u>4,510,348</u>	<u>2,707,364</u>

11. Deferred income

	2012	2011
	RM	RM
Balance as at 1 January	6,416,924	7,590,464
Received during the year	360,479	248,405
Released to Income Statement	(1,236,279)	(1,421,945)
Balance as at 31 December	<u>5,541,124</u>	<u>6,416,924</u>

12. Revenue

	2012	2011
	RM	RM
Fixed Deposit Interest Income	1,314,006	1,069,371
Tender Document Fees	18,161	4,900
Other Income	737,538	14,042
	<u>2,069,705</u>	<u>1,088,313</u>

13. Government Grant

	2012	2011
	RM	RM
Operating Grant	<u>5,000,000</u>	<u>7,000,000</u>

14. Staff cost

	2012	2011
	RM	RM
Personnel Emolument	3,601,279	3,191,115
Staff incentives (e.g. excellence award)	71,864	19,169
EPF	446,035	378,613
SOCSO	43,402	40,465
Overtime	37,465	31,200
Transport and Travelling	231,628	340,780
Medical expenses	69,407	68,116
Staff Uniform	12,032	26,487
	<u>4,513,112</u>	<u>4,095,945</u>
Number of staff	99	89

15. Other operating expenses

	2012	2011
	RM	RM
Advertisement	3,807	8,517
Audit Fees	5,807	7,295
Bank charges	220	16
Computer & Accessories	52,995	34,662
Consultancy fees	84,284	114,079
Conference and Seminar Fees	5,427	17,033
Council Members' Allowance & Sitting Fees	31,160	32,200
Electricity charges	260,705	247,227
Entertainment	31,614	53,358
Fuel and Lubricant	26,791	21,597
Human Resource Development Expenses	46,529	256,922
Lab Consumables	215,228	373,626
Lab Maintenance	31,114	108,888
Loss on disposal of Property, Plant & Equipment	1,385	2,005
Insurance	36,670	29,303
Market testing & research	211,100	167,653
Motor Vehicles Road Tax	2,811	1,372
Newspapers	13,219	14,122
Office Expenses (other office supplies)	101,258	115,219
Office Maintenance	255,750	177,029
Postage and courier	24,506	10,515
Printing and Stationery	20,655	11,126
Public Communication Services	-	38,483
Repairs and maintenance - motor vehicles	22,265	34,514
Telephone/fax/internet charges	49,189	51,751
Water charges	16,722	14,112
	<u>1,551,211</u>	<u>1,942,624</u>

16. Capital commitment

Approved capital expenditure and contracted for in the financial statement as at 31 December 2012 is RM1,129,555. (Year 2011: Nil).

17. Currency

All amounts are stated in Ringgit Malaysia (RM).

SIJIL KETUA AUDIT NEGARA

MENGENAI PENYATA KEWANGAN PUSAT KEPELBAGAIAN BIOLOGI
SARAWAK BAGI TAHUN BERAKHIR 31 DISEMBER 2012





**SIJIL KETUA AUDIT NEGARA
MENGENAI PENYATA KEWANGAN
PUSAT KEPELBAGAIAN BIOLOGI SARAWAK
BAGI TAHUN BERAKHIR 31 DISEMBER 2012**

Penyata Kewangan Pusat Kepekabagaian Biologi Sarawak bagi tahun berakhir 31 Disember 2012 telah diaudit oleh wakil saya. Pihak pengurusan bertanggungjawab terhadap Penyata Kewangan ini. Tanggungjawab saya adalah mengaudit dan memberi pendapat terhadap Penyata Kewangan tersebut.

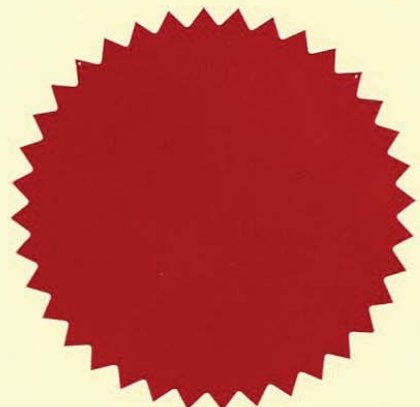
Pengauditan telah dilaksanakan mengikut Akta Audit 1957 dan berpandukan piawaian pengauditan yang diluluskan. Piawaian tersebut menghendaki pengauditan dirancang dan dilaksanakan untuk mendapat kepastian yang munasabah sama ada Penyata Kewangan adalah bebas daripada kesilapan atau ketinggalan yang ketara. Pengauditan ini termasuk memeriksa rekod secara semak uji, menyemak bukti yang menyokong angka dan memastikan pendedahan yang mencukupi dalam Penyata Kewangan. Penilaian juga dibuat terhadap prinsip perakaunan yang digunakan, unjuran signifikan oleh pengurusan dan persembahan Penyata Kewangan secara keseluruhan. Saya percaya pengauditan yang dilaksanakan memberi asas yang munasabah terhadap pendapat saya.

Pada pendapat saya, Penyata Kewangan ini memberi gambaran yang benar dan saksama terhadap kedudukan kewangan Pusat Kepekabagaian Biologi Sarawak pada 31 Disember 2012 serta hasil operasi dan aliran tunainya untuk tahun tersebut adalah selaras dengan piawaian perakaunan yang diluluskan.

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

KUCHING

TARIKH: **17 JUN 2013**



PENYATA Pengerusi dan Timbalan Pengerusi

Kami, **YB TAN SRI DATUK AMAR HAJI MOHAMAD MORSHIDI BIN ABDUL GHANI** dan **YBHG DATU HAJI SUDARSONO BIN OSMAN** yang merupakan Pengerusi dan Timbalan Pengerusi **MAJLIS KEPELBAGIAAN 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 **PUSAT KEPELBAGIAAN BIOLOGI SARAWAK** pada **31 DISEMBER 2012** dan hasil kendaliannya serta perubahan kedudukan kewangannya bagi tahun yang berakhir pada tarikh tersebut.

Bagi pihak Majlis,



.....
**YB TAN SRI DATUK AMAR HAJI MOHAMAD
MORSHIDI BIN ABDUL GHANI**

Tarikh: 9/4/13
Kuching

Bagi pihak Majlis,



.....
**YBHG DATU HAJI SUDARSONO
BIN OSMAN**

Tarikh: 9/4/2013
Kuching

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

Saya, **DR RITA MANURUNG**, pegawai utama yang bertanggungjawab ke atas pengurusan kewangan dan rekod-rekod perakaunan **PUSAT 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)
pada5..... haribulan...April 2013.....)

.....*Rita Manurung*.....

Di hadapan saya



.....*Paul Kawin Pipo*.....
PESURUHJAYA SUMPAH

PAUL KAWIN PIPO
SECOND CLASS MAGISTRATE
RESIDEN OFFICE KUCHING

APPENDICES

Detailed Listing of SBC's Awareness and Appreciation Activities

I.	Awareness and Appreciation Visits	<i>Appendix 1, Page 48</i>
II.	Public Awareness Workshop and Public Lectures.....	<i>Appendix 2, Page 48</i>
III.	Seminars, Forums, Dialogue Sessions.....	<i>Appendix 3, Page 50</i>
IV.	Participation at Exhibitions.....	<i>Appendix 4, Page 50</i>
V.	VIP and Corporate Visits.....	<i>Appendix 5, Page 50</i>
VI.	Publications.....	<i>Appendix 6, Page 51</i>
VII.	Other Activities.....	<i>Appendix 7, Page 53</i>

AWARENESS & APPRECIATION VISITS 2012

Appendix 1

No	School/Organisation	Date	No. of Participants
1	Agriculture Institute, Sarawak	17 Jan	10 pax
2	Masterskill College of Nursing & Health, Metro Campus Kuching	28 Feb	40 pax
3	PLKN Camp Permai Bau	1 Mar	45 pax
4	Kolej Antarabangsa Teknologi Lanjutan Sarawak (International College of Advanced Technology Sarawak – ICATS)	6 Mar	43 pax
5	Kolej Antarabangsa Teknologi Lanjutan Sarawak (International College of Advanced Technology Sarawak – ICATS)	8 Mar	43 pax
6	Lodge International School	5 Apr	50 pax
7	UCSI University Sarawak Campus	26 Apr	21 pax
8	UNIMAS	21 May	12 pax
9	SMK Sungai Tapang (Red Crescent Society)	28 May	25 pax
10	Program Pendidikan Khas Integrasi (PPKI), SMK St. Joseph Miri	5 Jul	40 pax
11	Institut Pendidikan Guru, Kampus Tun Abdul Razak	19 Jul	20 pax
12	SMK Green Road (Astronomy Club)	20 Jul	24 pax
13	Tadika Kemas Kampung Apar, Singai, Bau	26 Jul	70 pax
14	SMK Jalan Arang (Geography students)	14 Sept	66 pax
15	INTI College Kuching	24 Sept	24 pax
16	Institut Pendidikan Guru, Kampus Tun Abdul Razak (Kindergarten kids)	27 Sept	45 pax
17	Kolej Antarabangsa Teknologi Lanjutan Sarawak (International College of Advanced Technology Sarawak – ICATS)	1 Oct	50 pax
18	Mrs David Eu & Colleagues (Retiree)	4 Oct	25 pax
19	SK Paya Mebi	5 Oct	55 pax
20	SK St Edward Belimbing	18 Oct	15 pax
21	SJK Chung Hua Sebuku	5 Nov	50 pax
22	Eco Lodge Care Centre	5 Dec	50 pax

PUBLIC AWARENESS WORKSHOPS & PUBLIC LECTURES 2012

Appendix 2

No	Event	Venue	Date	No. of Participants	Target Participants
1	'Following the Footprints of the Great Naturalist, Alfred Russel Wallace in Sarawak (1854-56) by Rambli Ahmad	Lecture Theatre, SBC	20 Jan	50 pax	SBC Staff , Tourist Guides, MNS Members & General Public
2	'Species Diversification of Licuala in Borneo' by Dr Saw Leng Guan	Lecture Theatre, SBC	10 Feb	56 pax	SBC Staff, Research Officers & Lecturers from relevant agencies and Universities, Tourist Guides, MNS Members & General Public
3	"Natural Product Diversity by Actinomycetes" by Dr Jean-Jacques Sanglier	Lecture Theatre, SBC	9 Mar	60 pax	SBC Staff , Research Officers & Lecturers from relevant agencies and Universities
4	Jumping Spider Diversity in Sarawak' by Dr Wayne Maddison & Edyta Piascik	Lecture Theatre, SBC	10 Apr	42 pax	SBC Staff, Research Officers & Lecturers from relevant agencies and Universities, Tourist Guides, MNS Members & General Public

5	'Biodiversity: Our Life, Our Heritage' by Mr Nagulendran Kangayatkarasu, Ministry of Natural Resources & Environment (<i>in conjunction with SBC Biodiversity Day 2012</i>)	Lecture Theatre, SBC	25 May	80 pax	SBC Staff , Tourist Guides, MNS Members & General Public
6	'Irrawaddy Dolphins in Sarawak' by Mr James Ak Bali, Sarawak Forestry Department (<i>in conjunction with SBC Biodiversity Day 2012</i>)	Lecture Theatre, SBC	25 May	80 pax	SBC Staff, Research Officers & Lecturers from relevant agencies and Universities, Tourist Guides, MNS Members & General Public
7	'Corals of Sarawak' by Associate Professor Dr Lee Nyanti, UNIMAS (<i>in conjunction with SBC Biodiversity Day 2012</i>)	Lecture Theatre, SBC	25 May	80 pax	SBC Staff, Research Officers & Lecturers from relevant agencies and Universities, Tourist Guides, MNS Members & General Public
8	'Camera Trapping for Wildlife Conservation in Malaysia Borneo' by Dr Jedediah Brodie, University of British Columbia, Canada	Lecture Theatre, SBC	6 June	75 pax	SBC Staff, Research Officers & Lecturers from relevant agencies and Universities, Tourist Guides, MNS Members & General Public
9	'Observations on the Pollination of Some Peninsular Malaysian Orchids' by Ong Poh Teck, Forest Research Institute Malaysia (FRIM)	Lecture Theatre, SBC	29 June	65 pax	SBC Staff, Research Officers & Lecturers from relevant agencies and Universities, Tourist Guides, MNS Members & General Public
10	An Incredibly Brief & General Overview of Anthropological Research (or What I Did at SBC) by Mintzi Martinez Rivera, Indiana University - Bloomington	Lecture Theatre, SBC	4 Jul	35 pax	SBC Staff
11	'Insights in the immuno-biology of arthralgia-inducing Chikungunya virus: from bed to bench and back' by Lisa F.P. Ng, PhD	Lecture Theatre, SBC	13 Jul	73 pax	SBC Staff, Research Officers & Lecturers from relevant agencies and Universities, Hospitals & Health Dept., Municipal Councils & General Public
12	'The Beauty of Snakes' by Hans Breuer	Lecture Theatre, SBC	10 August	80	SBC Staff , Research Officers & Lecturers from relevant agencies and Universities, Tourist Guides, MNS Members & General Public
13	'Orangutans of Sarawak' by Sundai ak Silang	Lecture Theatre, SBC	28 Sept	87 pax	SBC Staff, Research Officers & Lecturers from relevant agencies and Universities, Tourist Guides, MNS Members & General Public
14	'Who Are These Bees' by Stephen Peterson	Lecture Theatre, SBC	25 Oct	59 pax	SBC Staff, Research Officers & Lecturers from relevant agencies, Tourist Guides, MNS Members & General Public
15	'Bornean Amphibians' by Pui Yong Min	Lecture Theatre, SBC	9 Nov	76 pax	SBC Staff, Research Officers & Lecturers from relevant agencies and Universities, Tourist Guides, MNS Members & General Public
16	'Microorganisms, Drug Discovery and Culture Collection' by Jean Jacques Sanglier	Lecture Theatre, SBC	16 Nov	47 pax	SBC Staff, Research Officers & Lectures from relevant agencies and Universities, Tourist Guides, MNS Members & General Public

SEMINARS, FORUMS & DIALOGUE SESSIONS 2012

Appendix 3

No	Event	Venue	Date	No. of Participants	Target Participants
1	Bio-Borneo 2012 (jointly organised with MOSTI & BiotechCorp, Genom Malaysia and MABIC as strategic partners)	Pullman Hotel	24-26 Feb	200 pax	Biotechnology industries & players, students, general public
2	State Consultation Meeting on State Policy & Legislation on Access & Benefit Sharing of Genetic Resources For Sarawak	Pullman Hotel	18 Jun	45 pax	Relevant Govt Agencies, Community Stakeholders

PARTICIPATION AT EXHIBITIONS 2012

Appendix 4

No	Event	Dates
1	Bio-Borneo 2012	24-26 Feb
2	Pameran sempena 'Hari Harta Intelek 2012' Kuantan, Pahang	27-28 Apr
3	SBC Biodiversity Day 2012	25 May
4	Bio-Malaysia 2012, KLCC	5-7 Oct
5	Pameran sempena Program Gerak Usahawan Koperasi Negeri Sarawak dan Karnival Mini Peruncitan dan Pemborongan di Stadium Perpaduan, Petra Jaya, Kuching	3-4 Nov
6	Pameran sempena 'National Seminar on the Protection of Geographical Indications' di Hotel Hilton, Kuching	6-7 Oct

VIP & CORPORATE VISITS 2012

Appendix 5

No	Event	Date
1	Universiti Malaysia Sarawak (UNIMAS)	4 Jan
2	Timbalan-timbalan Naib Canselor (R&D) Institut-Institut Pengajian Tinggi Malaysia	6 Jan
3	Agahabad, Kuala Lumpur	13 Jan
4	Ministry of Science, Technology & Innovation (MOSTI) and MABIC (Meeting on Bio-Borneo)	17 Jan
5	Dr Paul Quek with Nepal Farmer Group	17 Jan
6	Courtesy Call by Borneo To the World	19 Jan
7	Mitsubishi Corporation	19 Jan
8	Sarawak Energy Berhad Corporate Communication and CSR	26 Jan
9	Universiti Sultan Zainal Abidin (UniSZA), Terengganu	27 Jan
10	Dato Sri Robert Jacob Ridu & Datin Sri Garnette Jalla Ridu	30 Jan
11	Agensi Nuklear Malaysia, Bangi	31 Jan
12	RTM Kuching (TV program filming)	8 Feb
13	YBhg Datu Sudarsono bin Osman, Perm. Secretary, Ministry of Resource Planning and Environment	9 Feb
14	Heidi Munan, Sarawak Museum Department	21 Feb
15	Swinburne University	21 Feb
16	UiTM Kota Samarahan (research presentation)	22 Feb
17	Biotech Corporation	27, 28 Feb
18	Education USA – MACEE – Kuala Lumpur	2 Mar
19	UiTM Kota Samarahan (Meeting)	12 Mar
20	MyIPO Kuala Lumpur	23 Mar
21	Agensi Inovasi Malaysia, K.L	12 Apr
22	Monash University, Sunway Campus	12 Mar

23	Dr Bernt Rydgren, Sweden	19 Apr
24	SALCRA Headquarters	30 May
25	Sabah Biodiversity Centre (SaBC), Jabatan Peguam Besar Negeri Sabah & Jabatan Hal Ehwal Dalam Negeri & Penyelidikan, JKM Sabah	7 Jun
26	CSIR, Curtin Universiti Miri	13 Jun
27	Research, Development & Innovation Department (RDID), Forest Department Sarawak	13 Jun
28	PEMANDU, Jabatan Perdana Menteri	9 Jul
29	Petronas Sarawak	10 Jul
30	Mr Matthew Chen, Mr Sih Tong Hua and Mr Jong TK	16 Jul
31	Bay Area Horticultural Society, USA (Chien Lee)	20 Jul
32	Bioversity International Asia-Pacific	26 Jul
33	Jabatan Museum, Kuala Lumpur	18 Oct
34	Maritime Institute of Malaysia (MIMA)	19 Oct

PUBLICATIONS FOR THE YEAR 2012

Appendix 6

No	Event	Published
1	Run to promote healthy living on Jan 7	Sunday Star, Sarawak, 1 January 2012
2	Sarawak Biodiversity Centre to hold health run on Jan 7	The Sunday Post, 1 January 2012
3	SBC-MAKSAP Health Run – 7 January 2012	Sarawaknet, 3 January 2012
4	More govt servants urged to take part in Maksak run	The Borneo Post, 9 January 2012
5	SBC to hold talk on British naturalist, Alfred Russel Wallace	11 January 2012
6	Scientist Wallace to be featured at Jan 20 SBC talk	The Star, Sarawak, 11 January 2012
7	SBC to hold talk about a great naturalist	The Borneo Post, 13 January 2012
8	Naturalist Wallace's Sarawak experience retracted	The Star Online, 25 January 2012
9	Talk on actinomycetes on March 9	The Borneo Post, 1 March 2012
10	S'wak's essential oil among products for trademark registration (<i>article on Mylpo/litsea cubeba Gl</i>)	The Borneo Post, 9 March 2012
11	Talk on jumping spider	New Sarawak Tribune, 30 March 2012
12	World Biodiversity Day essay writing contest	The Star, Sarawak, 3 April 2012
13	New species of spider found in S'wak	The Borneo Post, 12 April 2012
14	New species and first Hispo spider found in Borneo	Sarawak Tribune, 12 April 2012
15	Contests to mark World Biodiversity Day celebration	Sunday Star, Sarawak, 15 April 2012
16	Express your love for nature in essay contest	The Star, Sarawak, 18 April 2012
17	SBC to promote biodiversity via colouring and pottery painting contests	The Star, Sarawak, 8 May 2012
18	SBC to hold Biodiversity Day on 25 May	New Sarawak Tribune, 16 May 2012
19	SBC to hold themed colouring and pottery painting contests for students	The Star, Sarawak, 18 May 2012
20	Talk to create awareness about dolphins, corals and biodiversity	The Star, Sarawak, 23 May 2012
21	Biodiversity Day talks at SBC	New Sarawak Tribune, 25 May 2012
22	10 pct protected marine area target by 2020	New Sarawak Tribune, 26 May 2012
23	Teachers applaud move by SBC	The Star, Sarawak, 26 May 2012
24	SMK Kuching High students best writer in essay competition	The Star, Sarawak, 26 May 2012
25	More than just a word – Ongoing activities crucial to raise awareness on importance of biodiversity	The Star Sarawak, 26 May 2012
26	Potential for new dolphin-watching products	The Borneo Post, 26 May 2012

27	Talk on ecology of mammals on June 6	The Star, Sarawak, 29 May 2012
28	Studying mammals using motion-triggered cameras	The Borneo Post, 30 May 2012
29	Ecologist gives talk on Camera Trapping	The Borneo Post, 7 June 2012
30	Zooming in on our wildlife – Ecologist: Camera trapping best way to trace animals and their responses to human-induced factors	The Star, Sarawak, 7 June 2012
31	Is the pangolin camera shy?	New Sarawak Tribune, 7 June 2012
32	'Majalah Tiga' to feature Long Iman Penans (on SBC TK Documentations)	The Borneo Post, 9 June 2012
33	TV3 to Feature Penan Traditional Knowledge Project	New Sarawak Tribune, 9 June 2012
34	'All about orchids' talk this Friday	The Star, Sarawak, 20 June 2012
35	Talk on secret sex life of Malaysian orchids	The Borneo Post, 21 June 2012
36	Studies on orchid pollination	The Star, Sarawak, 30 June 2012
37	Learn all about chikungunya at talk	The Borneo Post, 4 July 2012
38	SBC hosts talk on deadly chikungunya virus	The Star, Sarawak, 4 July 2012
39	Talk on chikungunya virus and research updates tomorrow	The Star, Sarawak, 12 July 2012
40	Expert: Findings relevant in designing effective treatment for chikungunya	The Star, Sarawak, 14 July 2012
41	Let's talk about snakes, says biodiversity centre	The Star, Sarawak, 26 July 2012
42	Learn about the beauty of snakes	The Borneo Post, 26 July 2012
43	SBC to hold talk on orangutans on Sept 28	The Borneo Post, 11 September 2012
44	Talk on Orangutans	New Sarawak Tribune, 11 September 2012
55	Talk on orangutans by Sarawak Biodiversity on Sept 28	The Star, Sarawak, 12 September 2012
46	Talk on orangutans 28 September	New Sarawak Tribune, 17 September 2012
47	Biodiversity centre to hold amphibian awareness presentation	The Borneo Post, 25 October 2012
48	Scientists closer to commercialising anti-cancer agent	The Star, Sarawak, 30 October 2012
49	Silvestrol clinical trial as potential anti-cancer agent	New Sarawak Tribune, 2 November 2012
50	Trial of anti-cancer agent in Sarawak	New Straits Times, 3 November 2012
51	Novartis timbang pelaburan di Malaysia	Utusan Sarawak, 6 November 2012
52	Novartis mulls investment in Malaysia	New Sarawak Tribune, 6 November 2012
53	UNIMAS jejak katak di kepulauan Borneo	Utusan Sarawak, 10 November 2012
54	Frog Talk	New Sunday Tribune, 11 November 2012
55	Bornean Amphibians talk attracts good mix of participants	The Sunday Post, 11 November 2012
56	Sarawak's clinical research hub (on MOU with Novartis)	New Straits Times, 14 November 2012
57	Talk at biodiversity centre on Friday (on 'Microorganisms, Drug, Culture Collection')	The Star, Sarawak, 14 November 2012
58	SBC talk on 'Microorganisms, Drug, Culture Collection'	New Sarawak Tribune, 14 November 2012
59.	Learn from the Penans	The Star Sarawak, 7 December 2012
60.	An unforgettable traditional documentation workshop in Long Iman	New Sarawak Tribune, 7 December 2012

61.	Long Iman hosts documentation workshop	The Borneo Post, 10 December 2012
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OTHER ACTIVITIES FOR THE YEAR 2012

Appendix 7

No	Event	Date
1	SBC-MAKSAK Health Run	7 Jan
2	Perarakan & Pertandingan Sepanduk Sempena Maulidur Rasul 2012, Miri	5 Feb
3	RTM Shooting	8 Feb
4	5S Launching	23 Mar
5	SBC Visit to Rumah Sri Kenangan	31 Mar
6	TV 3 Shooting at Long Iman & SBC (for Majalah 3)	7 -16 May
7	SBC Biodiversity Day 2012	25 May
8	Padawan Raft Safari	8 Jul
9	Perarakan & Rapat Raksaksa Sempena Sambutan Ulangtahun ke-91 TYT Yang di-Pertua Negeri Sarawak	8 Sept
10	SBC Motivational Day & Annual Dinner 2012	21 Sept
11	SBC Safety & Health Course	31 Oct
12	1-Day Seminar Track with Novartis @ BioMalaysia 2012	5-7 Nov
13	SBC Team-building	29 Nov – 2 Dec

VISION

TO BE THE CENTRE OF EXCELLENCE FOR BIODIVERSITY
RESEARCH AND SUSTAINABLE UTILISATION



MISSION

TO DISCOVER AND HARNESS SARAWAK'S BIODIVERSITY RESOURCES
THROUGH RESEARCH AND DEVELOPMENT FOR THE BENEFIT OF
SARAWAK AND MANKIND



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