

# Session 5

Traditional knowledge and genetic resource,  
traditional medicine and biodiversity and  
benefit sharing: what Thailand should do

by  
Yeo Tiong Chia  
Chief Executive Officer  
Sarawak Biodiversity Centre  
(Malaysia)

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## Preamble

- ⑩ Malaysia signed Convention on Biological Diversity (CBD) in 1992 and ratified in 1994
- ⑩ It has no Access and Benefit Sharing (ABS) Act yet; draft law by Ministry of Natural Resources and Environment
- ⑩ Have not signed Nagoya protocol
- ⑩ Sarawak is the first state in Malaysia to enact its biodiversity laws (1997)- amended in 2014 to include prior informed consent and ABS

## Context of talk: Malaysia (Sarawak's) experience

- ⑩ Strategies to conserve Traditional Knowledge (TK) for research to generate benefit
- ⑩ Natural product library and database system- key to collaborations

# Introduction



Base 801410 (546184) 10-89



# Evolution of Biodiversity Laws & Regulations

## Sarawak Biodiversity Centre Ordinance, 1997

- Established the Centre and inventory of biodiversity (flora and fauna)
- Problems in implementation

## Sarawak Biodiversity Centre Ordinance (Amendment), 2003

- Focus on TK Documentation and R&D (bioprospecting)
- Sarawak Biodiversity Regulations 2004

## Sarawak Biodiversity Centre Ordinance (Amendment), 2014

- Access (PIC), Benefit Sharing based on Mutually Agreed Terms
- Sarawak Biodiversity Regulations, (will be gazetted in) 2016
  - Regulates biodiversity research that has commercial application
  - PIC only if traditional knowledge is access







# Strategies to Conserve Traditional Knowledge and Generate Benefits -adding value



Systematic documentation of TK and collection of plants



Natural product library

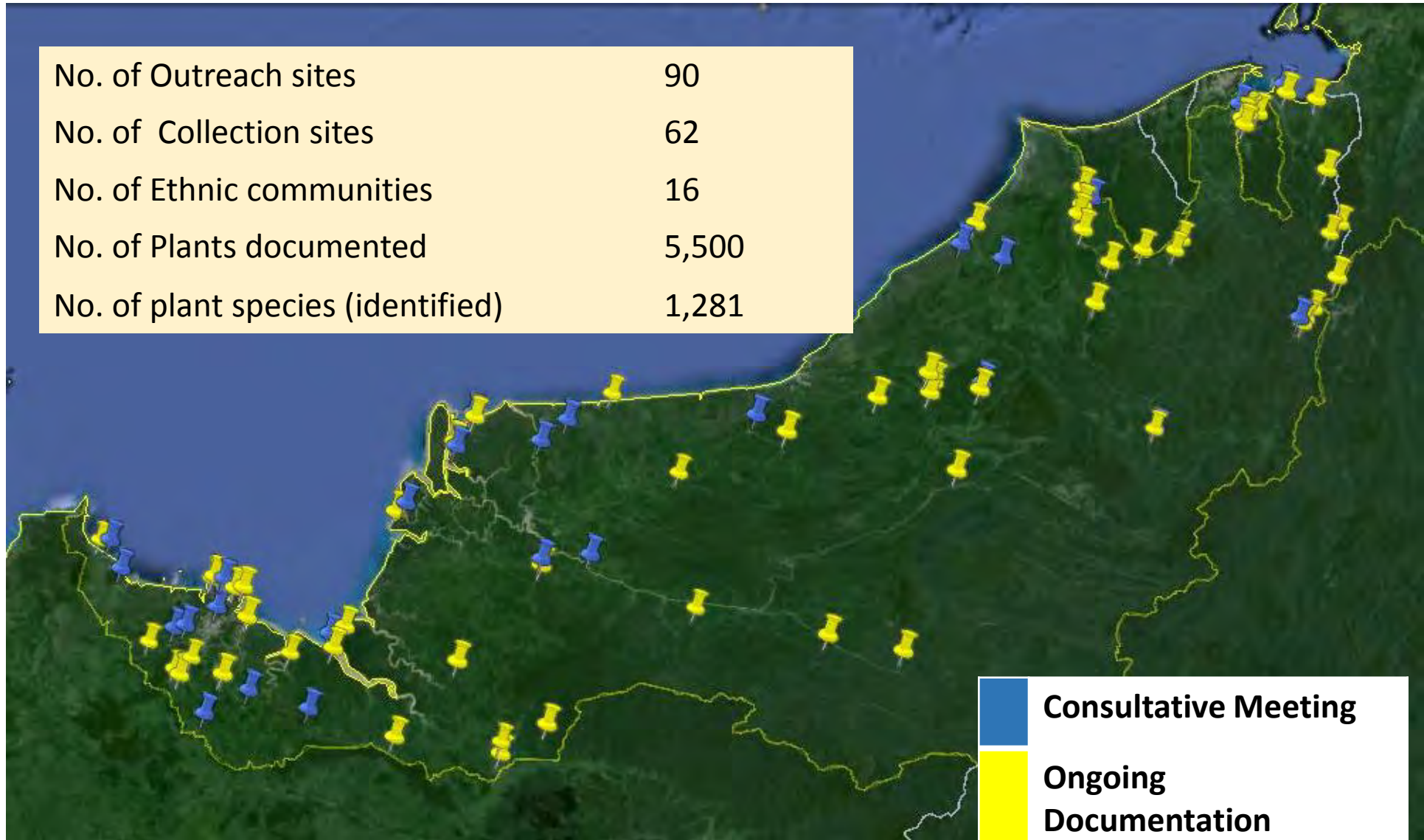


TK Database



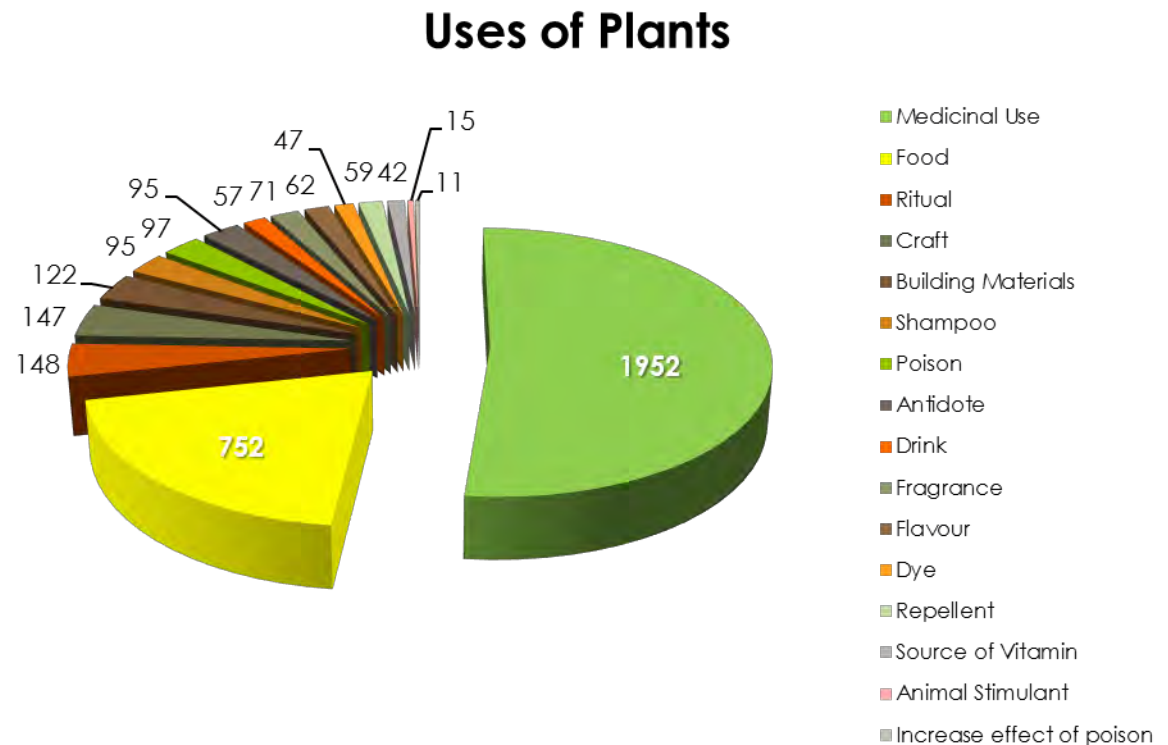
# Distribution of Locations: Sarawak

No. of Outreach sites	90
No. of Collection sites	62
No. of Ethnic communities	16
No. of Plants documented	5,500
No. of plant species (identified)	1,281



# Traditional Knowledge Documentation: Summary of Plant Collection (2002-2016)

COMMUNITY	NO. OF PLANTS
Bidayuh (8 sites)	1,151
Iban (16 sites)	1,141
Kelabit (3 sites)	478
Lun Bawang (6 sites)	583
Penan ( 6 sites)	1,054
Kayan (3 sites)	185
Kenyah (4 sites)	245
Melanau (4 sites)	194
Selako (1 site)	112
Kedayan (Mixed with Iban & Lun Bawang – 1 site)	62
Tabun (1 site)	51
Bisaya (1 site)	30
Punan (1 site)	39
Malay (6 sites)	156
Bakatan (1 site)	19







TK Documentation



Collection

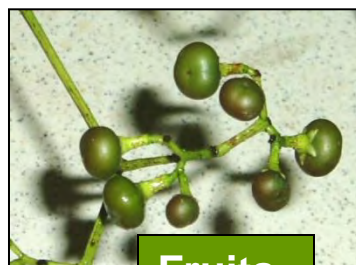


Sorting

## Preparation for Natural Product Library



Leaves



Fruits



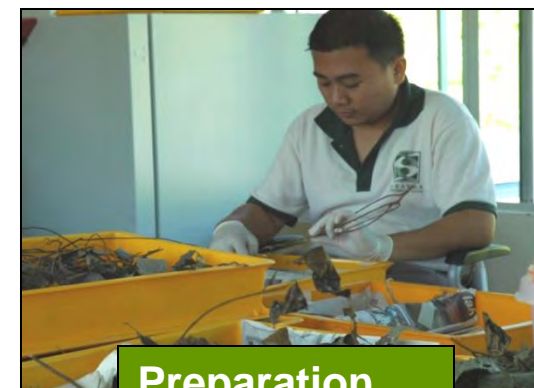
Stems



Roots



Whole plant



Preparation





# Extraction of Plant Samples



Oven drying



Grinding



Extraction



Plant Extracts



Drying

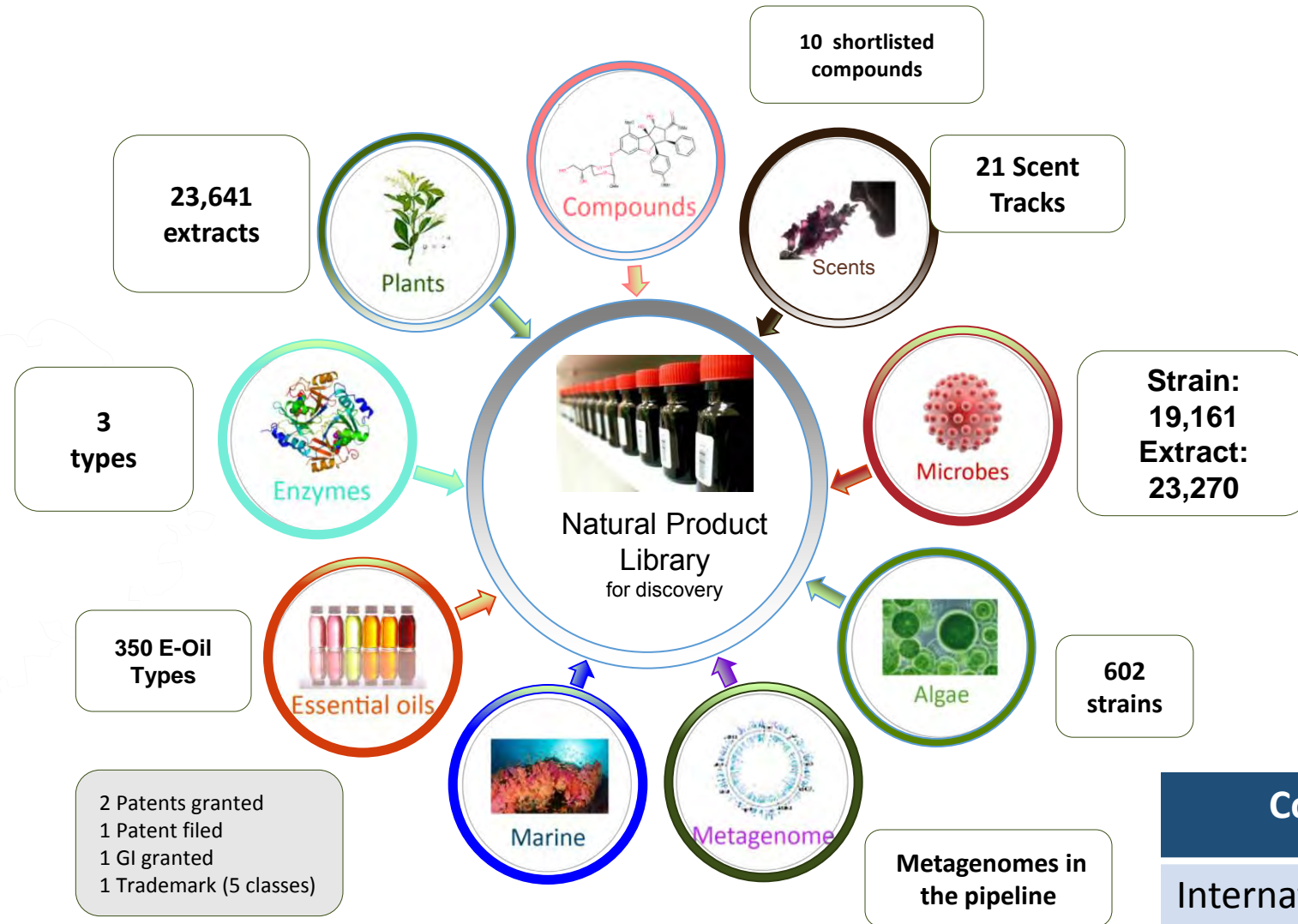


# What do we do with all the samples?



- Build a natural product library-a centralized depository with information
- Huge advantage of natural products in R&D; chemical are naturally evolved-potential leads for pharma
- Platform for establishing screening collaborations
- A library will be easy to access for research-you do not need to go into the jungle

# Natural Products Library: Content



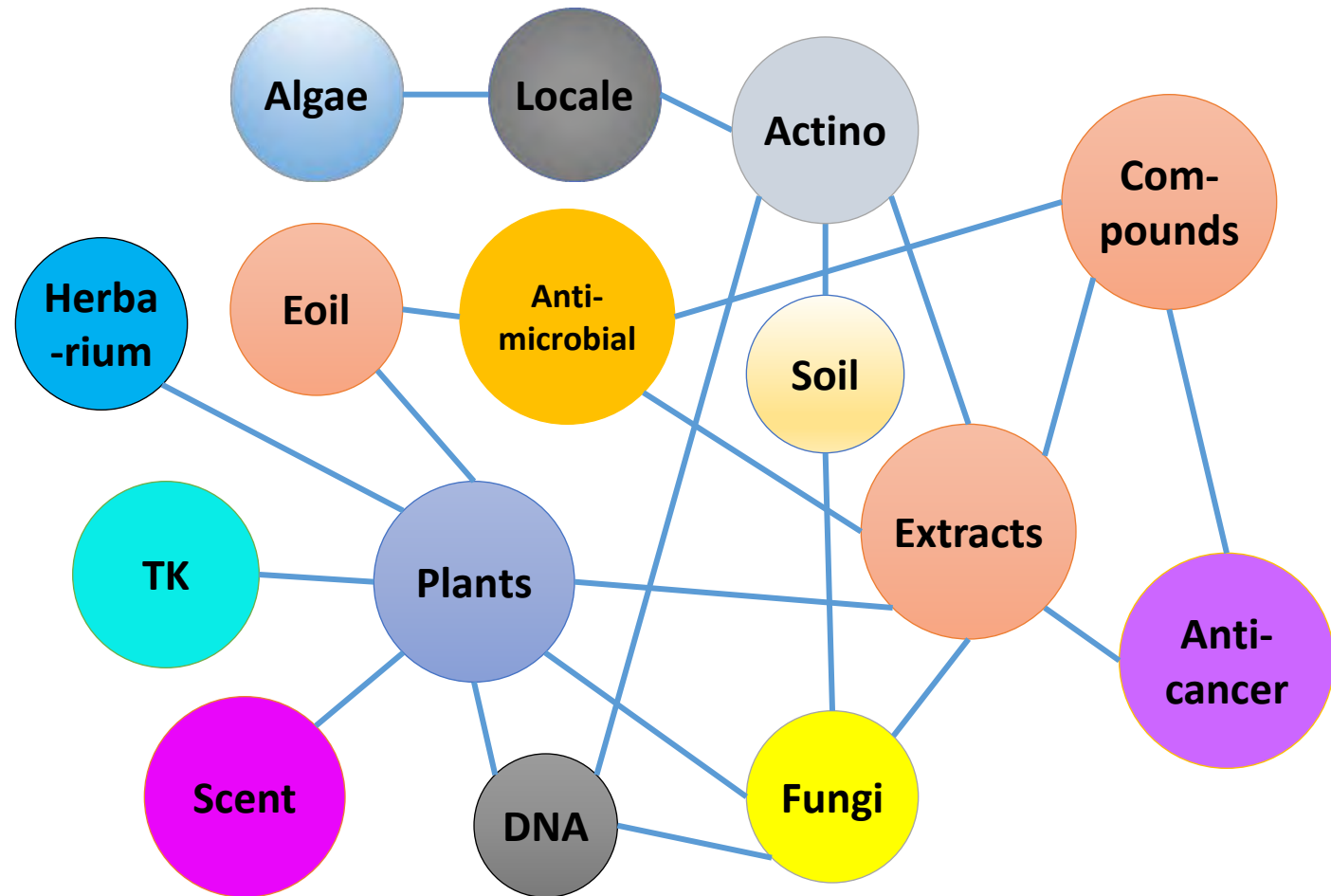
Collaborations	
International	20
National	10

As at 17.05.2016



# Abbott STARLIMS

## Multi-dimensional Data Relationships



STARLIMS [About](#) [Help](#) [My Preferences](#) [Form Tools](#) [Designer](#) [Logout](#)

Dashboard BioRepository

**BioRepository** [Search](#) [Add](#) [Delete](#) [Print](#) [Edit Metadata](#) [Audit](#) [Save Cart](#) [Load Cart](#) Records Per Page: 25 Page: 2 / 24 [Refresh](#)

**Transactions**

- Create Product
- Shipping
- Assign Tests
- Assign Project
- Change Custodian
- Change Owner
- Consume
- Dispose
- Move (Change location)
- Move (from container to container)
- Move (to container)
- Move (to home)
- Move (to location)
- Move Contents
- Pool
- Send To
- Receive In Lab
- Reserve Sample
- Adjustment (Qty)

**Samples** **Containers**

Repr Search:  [Go](#)

Matcode	Inventory Id	External Id
Plant S...	15PL0029	
Plant S...	15PL0030	
Plant S...	15PL0031	
Plant S...	15PL0032	
Plant S...	15PL0033	
Plant S...	15PL0034	
Plant S...	15PL0035	
Plant S...	15PL0036	
Plant S...	15PL0037	
Plant S...	15PL0038	
Plant S...	15PL0039	
Plant S...	15PL0040	
Plant S...	15PL0041	
Plant S...	15PL0042	
Plant S...	15PL0043	
Plant S...	15PL0044	
Plant S...	15PL0045	
Plant S...	15PL0046	
Plant S...	15PL0047	
Plant S...	15PL0049	
Plant S...	15PL0050	
Plant S...	15PL0051	
Plant S...	15PL0052	

**General** **Storage** **Genealogy** **Attachments** **Test Results** **Chain of Custody**

**General**

Inventory Id: 15PL0049 Project: HQ/ROUTINE  
 Matcode: Plant Sample Amount Left: 0.0000 g  
 External Id: Expiry Date: 4/8/2016

[Collection Location](#)  
[View map](#)

**Metadata**

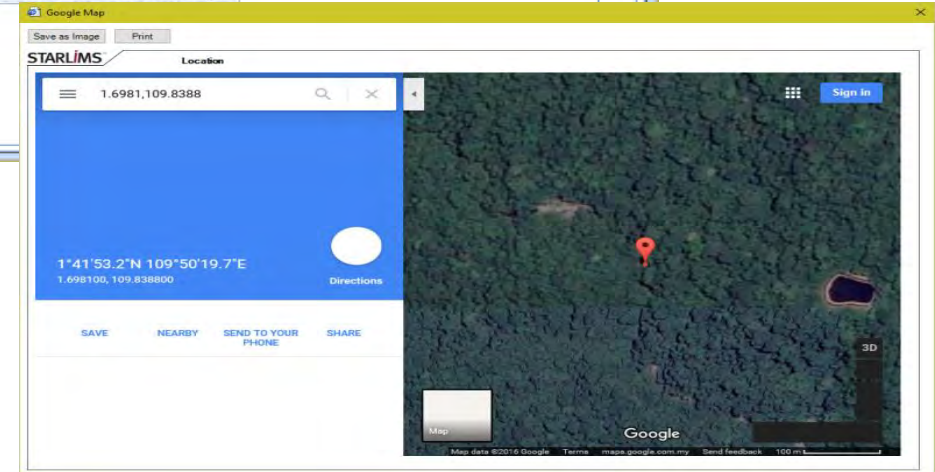
SABCNo: 9983 Genus Description:   
 Family Description:   
 CollectedOn: 2015-04-07 Species Description:   
 Sample For:  R&D  Herbarium  Living Collection  
 Altitude:  Local Name: Enjerai  
 Latitude: 1.6611 Ethnic: Melayu  
 Longitude: 111.03648 Informant: TR Gasing Anak Sulai

**Plant Usage** [Add](#) [Delete](#)

Plant Part	Usage	Method
Leaves	Ubat mata (bengkak, merah)	Daun muda ditumbuk untuk mendap...
Leaves	Melegakan kesakitan mata	Daun muda ditumbuk untuk mendap...

Extension of LIMS to the documentation of biological resources associated with Traditional Knowledge.

Full genealogy and history of TK, communities, specimens, species, locations, bioassays etc



# Summary: Process to Generate Benefits from TK





# Touchpoints on TPP

## What Thailand could/should do

### 1. Biodiversity laws

- Does Thailand has an ABS act? Law must have clarity and transparency to attract investors or collaborators
- Review, identify overlapping authorities and align laws
- Can a single law ensure TK and biological resources be safeguarded?
- Expect that implementation will be difficult and enforcement will be challenging

“(bb) to ensure that prior informed consent is obtained from the natives where traditional knowledge associated with a biological resource is accessed and an agreement that includes benefit sharing based upon mutually agreed terms is entered into;”.



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# Touchpoints on TPP

## 2. Research collaborations with TPP countries

- Intellectual property is major outcome of research collaboration
- Countries with advanced research sector; USA, Singapore, Japan
- Improve the standard of research to match TPP partners
- Understanding of the IP laws in different countries is crucial e.g. Bayh-Dole Act
- Do your collaborators recognize your rights over TK and biological resources
- E.g USA not a signatory to the CBD, so what is their point of view on benefit sharing. How would it recognize PIC and ABS that are necessary part of TPP
- Identify opportunity areas for cooperation/leverage on your TK

# Touchpoints on TPP

## 3. Awareness of intellectual property rights, PIC and ABS

- Should be enhanced amongst the policy makers, researchers, communities, all sectors of industry players –even tour agencies!
- Prior informed consent protects indigenous rights to self determination, right to participation and duty to consult-therefore there is a sense of bottom up communal decision towards a project proposal
  - Lack of understanding or misunderstanding can lead to unnecessary failures even if the intention is meaningful



# Thank you!



CONTACT US AT

Email: [biosar@sbc.org.my](mailto:biosar@sbc.org.my)

URL: [www.sbc.org.my](http://www.sbc.org.my)