

BBP

Biodiversity-Based Products
as an economic source for the improvement of
livelihoods and biodiversity protection (ASEAN)
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How to Conduct Internet Research on Biodiversity-Based Products (BBPs)

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Module 2 – Data Research, Organization and Management

Module Title:	Data Research, Organization and Management
Learning Objectives	At the end of this module, the participant should be able to: <ul style="list-style-type: none">● Understand the concept of the Internet and search engines like Google as a tool to find valid BBP references on BBPs;
Learning Outcomes	What the participants will be able to do from the learnings provided by the module. At the end of the module, the participants should be able to: <ul style="list-style-type: none">● Perform internet research on BBPs and their value chains, identify relevant authoritative websites and apply useful search strings that lead to the discovery of a pool of BBP information resources.

Summary of Topics, Duration and Requirements

Module Topics	Description	Method Used and Duration	Requirements
Conducting internet research	Introduces how the internet and the search engines function in a data research, and discusses useful techniques to conduct an effective internet research on BBPs and their value chains	Lecture, 30 minutes Hands - on (exercises on internet research)	Fast internet access Laptop Pen Paper

Detailed Discussion of the Topics

Topic 1 – Internet research

1. A Brief Introduction to Internet Concepts Relevant to Biodiversity-Based Products Research

1.1 The internet is a massive network of networks, a networking infrastructure.

The internet is a medium to access the world wide web.

The world wide web is the heaviest user of the internet.

The internet connects millions of computers together around the world. It forms a network where any computer can communicate with any other computer, as long as these computers are connected to the internet.

The internet facilitates the dissemination of information. Other than the world wide web, the internet is also used for emails, instant messaging, FTPs (file transfer protocol), forums, newsgroup, among others.

1.2 Google is the world's most popular search engine.

What is a search engine? It is a program that collects and organizes content from all over the internet.

A search engine searches through a database of its own that corresponds to keywords or characters specified by the user, for finding particular sites on the world wide web.

There are many other search engines like:

Bing.

Yahoo.

Ask.com.

AOL.com.

Baidu.

Wolframalpha.

DuckDuckGo.

There's also the deep web.

The deep web, also called invisible web or hidden web, is that area of the world wide web, with content that are not indexed by standard search engines, like Google. The very common uses of the deep web are web mail, online banking, and services that users must pay for, and which is protected by a paywall, such as video on demand, some online magazines and newspapers, and many more.

1.3 Google is our vehicle to our destination point (BBP references).

We use Google and its programming, to conduct our reference search. We send Google our questions by typing the appropriate search queries on its search tools, and it gives us back answers according to its designed search algorithms.

Google uses a computer program called a 'web crawler' that looks at the billions of websites available on the world wide web and examines their content to find 'keywords'. Then it indexes these to make the websites easier for the search engine to find.

Understanding how the internet and the search engines work will provide us with more effective approach on how to conduct internet research about our specific topics.

2. Asking clear, concise questions to search engines leads to clear, concise search results.

Learn to develop the skill of asking clear, concise questions to the search engines. Not only will it give you relevant answers that you need, also, you can have all these resources available within

your reach in the span of few seconds. If your questions are clear, you can avoid confusion when gathering all your search results, and save time to perform other activities of your research project.

Examples:

General question:

What are the biodiversity-based products and their value chains that are found in Vietnam/Cambodia/Lao PDR?

In this question, we are specifically asking:

- species/common name used as biodiversity-based products (e.g. *Erythrolalum scandens* or Bo Khai)
- what are their commercial use (e.g. Bo Khai used as vegetable for food and medicine; honey bee used for food and medicine; bamboo used for handicrafts and furnitures)
- How are they produced? harvested? processed? packaged? transported? marketed? sold?
- Where are they found? Which country? What province? What habitat?

3. Start by asking questions to authoritative and scholarly websites first.

Authoritative and scholarly websites provide peer-reviewed research, that are of the highest standards.

How to find these sites:

- library databases - National Library, Public Libraries
 - Ask known experts in your field.
 - Communicate with experts, respected leaders and other researchers who have affiliations in your topic. Ask for recommended sites, databases and tools.
 - topic-specific database, if available (**example only**: Vietnam Plant Database, Cambodia Vegetable/Fruit Database, Lao PDR Database of Herbs and Spices)
 - Google Scholar (www.scholar.google.com)
 - journal databases (digital libraries like <https://www.jstor.org> JSTOR, <https://doaj.org/> Directory of Open Access Journals)
 - .gov and .edu sites
- Examples:

<http://www.monre.gov.vn> - Ministry of Natural Resources and Environment

<http://vea.gov.vn> - Vietnam Environment Administration

<http://www.moe.gov.kh/> - Ministry of Environment (Cambodia)

<http://www.monre.gov.la> - Ministry of Natural Resources and Environment (Lao PDR)

<https://vnu.edu.vn> Vietnam National University Hanoi

4. Use Google or any other preferred search engines, with caution.

Not all search results that appear on the first few pages of Google mean that they are the best references. They simply mean that they are the "top passers" of the search algorithms of that search engine. Sift through the results by researching further on the websites or references that you've chosen.

4.1 How to Get the Best Search Results in Google or Any Search Engine

4.1.1 Use Keywords

Example:

Looking back on Lesson 2.1, instead of asking "What are the biodiversity based products and their value chains that are found in Vietnam/Cambodia/Lao PDR?"

We can instead ask:

vegetable products and value chains in Vietnam/Cambodia/Lao PDR

bo khai and production in Vietnam/Cambodia/Lao PDR

bo khai products

bo khai production

bo khai marketing

bo khai transport

bo khai packaging

bo khai cultivation

bo khai pricing

database Vietnam vegetables

list vegetable Vietnam

list vegetable chain Vietnam

4.1.2 Use synonyms or related words or terminologies.

biodiversity-based products :

[use general terms] plants, vegetables, medicinal plants, spices;

[use any common name or local name of a BBP species] bo khai, bamboo, honey bee, ginger

value chains:

production, harvesting, transportation, preserving, packaging, pricing, marketing, selling

database:

list, compilation, checklist, collection, directory, index, catalogue, network

4.1.3 Instead of asking general questions such as "commercial use of biodiversity species in Vietnam/Cambodia/Lao PDR", use a specific name, and then use the results to get more ideas on what to search next to find more information (e.g. Search Bo Khai plant, to get other names of edible plants found in Vietnam).

4.1.4 Use Boolean operators (AND, OR, and NOT) or (+, OR, -)

Use AND or + when you want both words included

Use OR when any of the words can be included

Use NOT or - when you want to exclude a word.

4.1.5 Use Google search strings to get more specific search results.

- Include all important words : bo khai production Vietnam
- Include exact words or phrase - Put exact words in quotes : "bo khai"+"production"+"Vietnam"
- Include any of these words - Type OR between all the words you want: bo khai OR plant name OR bamboo
- Exclude words that you don't want - Put a minus sign just before words that you don't want : "bo khai" -"malunggay" -leafy vegetable
- Use the asterisk wildcard as a placeholder that will be automatically filled by the search engine later : "Bo Khai * value chain"

4.1.6 Add the file format that you'd like to retrieve, after using keywords.

"plant"+"database"+"Cambodia" filetype:xls

"plant"+"database"+"Cambodia" filetype:doc

"plant"+"database"+"Cambodia" filetype:pdf

4.1.7 Ask questions using a Google syntax.

- Use "site:[website.com]" to search specific sites, e.g. site:iucn.org bo khai
- Use "link:[website.com]" to find which page links to a specific page, e.g. link:bbp.aseanbiodiversity.org
- Use "related:[website.com]" to find sites that are similar to other sites, e.g. related:wwflaos.org
- Use "Intitle:[text]" at the beginning of a query word or phrase to restricts your search results to just the titles of Web pages, e.g. "intitle:"Medicinal Plants of Cambodia"
- Use "Intext:[text]" to search only the body text, ignoring titles, links, etc. This is useful when what you're searching for might commonly appear in URLs, e.g. "intext:Erythralumscandens"
- Use combination of syntax to retrieve more specific results
"intitle:"database"AND"plants"AND"vietnam" site:.vn"

4.1.8 Research through Google Groups.

Find useful group discussions using Google Groups.

- You can go to <https://groups.google.com> and type in "biodiversity"+"base"+"product"+"Asean" in the search box. OR
- You can make a Google search and type "site:groups.google.com "biodiversity"+"base"+"product"+"Asean""

4.1.9 Be notified when new references become available on your chosen keyword, by signing-up for Google Alert (<https://www.google.com/alerts>).

4.1.10 Use country-specific Google url to get the best possible country-specific search results.

<https://www.google.com.vn/>

<http://www.google.com.kh>

<http://www.google.la>

5. Internet Research Summary

- How to Conduct A Successful BBP Internet Research in 10 Steps
- Most Useful Google Queries for BBP Internet Research
- Recommended Websites and Species Data Sources

How to Conduct A Successful BBP Internet Research in 10 Steps

1. Determine a clear, concise question.
2. Determine your keywords, synonyms and related terms.
3. Identify authoritative and scholarly websites, sources and databases. Research in their search engines.
4. Research using Google Scholar.
5. Research using Google or any other search engine, carefully.
6. Narrow down your search results by using boolean operators and, Google search strings and syntax.
7. Use specific keywords that can lead to a list of more keywords to research.
8. Add specific file format, after your keyword.
9. Refer to the "List of Recommended Websites".
10. Combine the use of Google syntax, with authoritative and scholarly websites, and, "List of Recommended Websites", whenever possible.

Most Useful Google Queries for BBP Internet Research

1. "[local plant name]"+"[specific value chain operation]"+"[location]"
"bo khai"+"preservation"+"Hanoi"

"bo khai"+"preserve"+"Hanoi"

"Giao Co Lam"+"pricing"+"Ho Chi Minh"
2. "[local plant name/species name/family name]"+"[knowledge or technology to be learned]"
"bo khai"+"shelf-life"+"prolong"

"zingiberaceae"+"planting techniques"
3. Search scientific name of a plant in Google Scholar.
Erythrolalum scandens

Gynostemma pentaphyllum

Recommended Websites and Species Data Sources

1. www.worldagroforestry.org
2. www.biodiversityinternational.org
3. www.unctad.org
4. www.sgp.undp.org
5. www.iucn.org

6. www.fao.org
7. www.rmportal.net
8. www.snrd-asia.org
9. www.searca.org
10. www.worldbank.org

Sources of Species Data

1. Vietnam Plant Data Center, <http://www.botanyvn.com>
2. Edible Plants of the World, http://fm13.cmsvr.com/fmi/webd/#Food_Plants_World
3. Catalogue of Life (**Search plants with scientific names**), <http://www.catalogueoflife.org/col>

Hand-out Manual/Material

Topic 1 – Internet research: Hands-On Exercises, 1 Hour

1. A Brief Introduction to Internet Concepts Relevant to Biodiversity-Based Products Research

This exercise will enable the participants to be engaged on discussion ideas about the internet and the search engines.

Materials Required:

A small group of 2-3 participants only.

Exercise:

Group Discussion, 10 minutes

Let each participant answer the following questions and share his/her answers within the group.

Answer as short and clear as possible.

- 1) Currently, how do you use the internet for research purposes?
- 2) In your observation, how do other researchers use it?
- 3) What is your favorite search engine? Why?
- 4) Does your favorite search engine help you find relevant references that you need in your BBP Project? Why or why not? How do you want it to work?

2. Asking clear, concise questions to search engines leads to clear, concise search results.

This exercise will help the participants develop and write clear, concise questions to be used as their search queries in the search engine.

Materials Required:

pen

paper/notebook

Exercise:

Write individually, 10 minutes

1. Write one clear, concise question that you want to research on the internet.
2. List all small questions that can be derived from your original question.

Make it as clear, and specific as possible, in terms of what you want to know about the BBPs and their value chains.

3. Start by asking questions to authoritative and scholarly websites first.

This exercise will help the participants find authoritative and scholarly websites for BBP research.

Materials Required:

Laptop or smart phone device

good internet connection

pen

paper/notebook

Previous small group of 2-3 participants

Exercise:

Conduct internet research, 7 minutes

1. List authoritative and scholarly websites that you know of.
2. List experts and/or contact persons whom you can ask.
3. If you're not familiar with any, find the sites suggested in the list.
4. Do all suggestions mentioned in "How to find these sites". Conduct all possible search, and write the results on a piece of paper or in your notepad.
5. Do all these in 7 minutes.

Group Discussion, 8 minutes

1. Discuss and compare your results with your group.
2. Are there many available authoritative sites about your topic?
3. Do you have similar results with other members of the group? Account the similarities or differences.

Remember:

- You should be able to identify a few authoritative sites or databases about your BBP products or value chains.
- They can be national, regional or global websites.

4. Use Google or any other preferred search engines, with caution.

This exercise will train the participants to conduct Google search using different search methods.

Materials Required:

Laptop or smart phone device

good internet connection

Exercise:

Conduct Google search, 15 minutes

1. Practice your Google search skills, and apply to your BBP products research.

Do all strategies, from 4.1.1 to 4.1.10.

Save your search results, and take note of your learnings.

5. Internet Research Summary

This exercise will enhance the participants' skills and understanding on Internet Research Best Practices.

Materials Required:

Laptop or smart phone device

good internet connection

pen

paper/notebook

Exercise:

Practice searching for BBP references using your preferred search engine, 10 minutes

1. Determine one BBP product that you haven't conducted a research on.
2. In 5 minutes, practice applying the methods mentioned in "How to Conduct A Successful BBP Internet Research in 10 Steps".
3. Save all your data.
4. What are the most useful Google queries/syntax that you used? Write your answer in your notebook.
5. What websites did you frequently go to? Are these authoritative sites? Write your answer in your notebook.
6. Reading through the search results that you have, what 3 new information did you find out about your BBP product and/or its value chain operations? List your answer in your notebook.