INDONESIAN COUNTRY REPORT
ON TRADITIONAL MEDICINE

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INDONESIA
INTRODUCTION

TRADITIONAL MEDICINES

• The traditional herbal system of medicine has been used since ancient times

• Most of the developing countries and in particular those situated in the tropical belt such as Indonesia constitute richest store house of medicinal plants

• Only a few of these countries have been able to organize proper system of research and development for exploitation, conservation or industrial use of these plants.

• The indiscriminate export and exploitation by private traders of valuable raw materials also creates ecological imbalance

• Indonesian government has in view of its importance, identified medicinal plants as a priority area of the country’s program.
Indonesia is known as a country with a **megadiversity** of biological species as well as the **megacenter** for world biodiversity.

- Indonesia possess:
- **10%** of world’s **flowering plant species**
- **12%** of world’s mammal species
- **16%** of world’s reptile and amphibian species
- **17%** of world’s bird species
- **25%** of world’s fish species
- **15%** of world’s insect species
Indonesia forest and marine content a huge of biodiversity:

- Almost 30,000 plants of herbal medicinal
- Appr. 7,000 species known and have been used for medical purposes
- About 250 species used in the traditional herbal medicine, *Jamu*, industries
- In 2003 a total of 9,737 items of herbal medicines has been registered, which include 1,093 items imported products
**Trend of Herbal Medicines in Indonesia**

<table>
<thead>
<tr>
<th>Year</th>
<th>Modern Medicines US $ (billion)</th>
<th>Herbal Medicines US $ (billion)</th>
<th>Contribution Herbal Med. %</th>
</tr>
</thead>
<tbody>
<tr>
<td>2003</td>
<td>17.0</td>
<td>2.0</td>
<td>10.5</td>
</tr>
<tr>
<td>2005</td>
<td>21.3</td>
<td>2.9</td>
<td>12.0</td>
</tr>
<tr>
<td>2010 Est</td>
<td>37.3</td>
<td>7.2</td>
<td>16.0</td>
</tr>
</tbody>
</table>

Source: BPPT 2005
Indonesian herbal medicines are used based on empirical practice: diseases preventive (48.9%), health promotion (22.47 %), diseases curative (21.78%) and the rests are for cosmetics.

According to Indonesian Medical Association (IDI) statements, herbal medicines will be accepted formally by the conventional (Western) medical doctors if its safety and efficacy has been proved scientifically (current trend application, especially for degenerative diseases, certain viral infection, and cancer).
The categories based on their processing development:

- **Herbal product** falls into traditional medicine (*jamu*) when the process is simple and toxicity evaluation is recommended (not compulsory).

- **Standardized extract preparation** when the process is more complex than *jamu*, has been controlled chemically, and has a preclinical (toxicology, pharmacology) evaluation.

- **Phytopharmaceutical** when it has a complex process, preclinical and clinical evaluation for safety and efficacy insurance is a must.
PHYTOPHARMACY

TRADITIONAL MEDICINES
WHICH HAVE BEEN PROVEN
SAFE, EFFECTIVE
QUALITY
STANDARDIZED

MoH Decree No: 760 / 1992
PHYTOPHARMACY

TENSIKARD
PHYTODIAR
RHEUMANEER
X GRA
STIMUNO
TRADITIONAL MEDICINES

MoH Decree 246/Menkes/Per/V/1990

PROHIBITED

MIXED/COMPOUNDED

WITH MODERN MEDICINES
Research and Systematization of Indonesian Traditional Medicines
Modern research on Indonesian herbal medicines in research institutions, universities and industries:

- Origin,  
- Process,  
- Distribution,  
- Quality,  
- Resources,  
- Therapeutic usage,  
- Safety,  
- Efficacy

Publications

All of these efforts are dedicated to the development of Indonesian medicinal plants to be able to compete globally.

International requirements such as on GMP, GAP, GLP, ICH-GCP (The International Conference on Harmonization-Good Clinical Practice), Research Guidelines for Evaluating the Safety and Efficacy of Herbal Medicines, HACCP, etc., should be followed.
# Nine medicinal plants of first priority for phytopharmaceuticals

<table>
<thead>
<tr>
<th>No.</th>
<th>Plant</th>
<th>Medicinal Uses</th>
<th>Bio-marker</th>
</tr>
</thead>
</table>
| 1   | *Psidium guajava* | Leaves: immunomodulator, Astringent  
Traditional, Most famous preparation for dengue treatment | ![Quercitrin](image)   |
| 2   | *Morinda citrifolia* | Fruit: Anti-hypertension  
Leaves: Antidiabetic | ![Morindin](image) ![Morindone](image) |
<table>
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<tbody>
<tr>
<td>3</td>
<td><em>Sizygium polyanthum</em></td>
<td>Leaves: Antidiabetic</td>
<td><a href="#">Chemical structure</a></td>
</tr>
<tr>
<td>4</td>
<td><em>Guazuma ulmifolia</em></td>
<td>Leaves: Antiobesity</td>
<td>Catechin and Friedelin</td>
</tr>
<tr>
<td>5</td>
<td><em>Zingiber officinale</em></td>
<td>Rhizomes: Carminative, Stomachic, Stimulants</td>
<td>Gingerol</td>
</tr>
<tr>
<td>No.</td>
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<tr>
<td>6</td>
<td><em>Curcuma domestica</em></td>
<td>Rhizomes: Antilipedemic, Anti-bacteria, cholagogum, Immuno-stimulants</td>
<td>Curcuminoid</td>
</tr>
<tr>
<td>7</td>
<td><em>Curcuma xanthorrhiza</em></td>
<td>Rhizomes: Hepatoprotector, Choleretic, anti-inflammation</td>
<td>Curcuminoid, Xanthorhizol</td>
</tr>
<tr>
<td>8</td>
<td><em>Andrographis paniculata</em></td>
<td>Leaves: Antipyretic, anti-ulcer, antidiabetic</td>
<td>Andrographolide (1), Neoandrographolide (2)</td>
</tr>
<tr>
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<td>Bio-marker</td>
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<tr>
<td>9</td>
<td><em>Centella asiatica</em></td>
<td>Aerial part: Vasodilator, Immuno-stimulants</td>
<td>Asiaticoside and Madecasol</td>
</tr>
</tbody>
</table>
Intelectual Property Right Protection
Convention on Biological Diversity (CBD)

- States have sovereign rights over their own biological resources.
- States are responsible for conserving their biological diversity and for using their biological resources in a sustainable manner.
RELATED LAWS AND RULES

- Law No. 5/1990 regarding Conservation of Natural Resources and Its Ecosystems.
- Law No.5/1994 regarding the Ratification of the United Nations Convention on Biological Diversity
- Law No. 7/1994 regarding the Ratification of TRIPs.
- Law No. 18/2002 regarding National System on Research, Development, and Application of Science and Technology.
- All Indonesian IPR Laws.
CONCLUSION

Indonesia is a rich country biodiversity and traditional knowledge including the traditional medicine. However, in the global era, the richness of biodiversity is not the determining factor for prosperity of the people.

Knowledge how to develop its biodiversity and traditional knowledge is important. The key factor is how Indonesia ability to convert knowledge into wealth and social good through the process of innovation.

It is a must for Indonesia to work collaboratively also with other countries in traditional medicine improvement.
Thank you.