



**Asia-Pacific  
Economic Cooperation**

---

**2013/SOM1/LSIF/020**

Agenda Item: 14

## **Life Science Innovation Forum - The Development of Medicinal Plant and Traditional Medicine**

Purpose: Indonesia  
Submitted by: Indonesia



**Life Sciences and Innovative Forum  
Planning Group Meeting  
Jakarta, Indonesia  
30 January 2013**

**APEC (LSIF) Life Science Innovation Forum**  
**The Development of Medicinal Plant and Traditional Medicine**

**I. Summary and Background:**

Traditional medicine has been used in some countries for hundreds or even thousands of years, and it was embedded in theories, beliefs and experiences which belong to specific group of peoples (ethnic). It can be perceived as a fundamental feature of their own identity and is often closely intertwined with lifestyles, cultural frameworks and social regulations.

Refer to the data provided by WHO in the Report on *The World Medicines Situation 2011*, between 70% and 95% of citizens in many developing countries use traditional medicine for the management of health and as a primary source of health care. This is explained, in most cases, either because they simply have no alternative choice due to access barrier, e.g. geographical or financial barrier, to modern health care, or because of cultural tradition. They turn to traditional medicine mainly because it is close at hand, affordable, readily available, and consistent with indigenous cultures or ethnic group, though its effectiveness needs proving.

Since the pivotal role of traditional medicine for people health in ASEAN countries, it is agreed to take Traditional Medicine as a part of ASEAN consideration. Traditional medicine has many advantageous aspects not only for health purposes but also for other sectors such as cultural, environments, tourism, and economic. Since 2009, ASEAN Member State has initiated to hold ASEAN Conference on Traditional Medicine. One of the primary issues discussed within the conference is safety, quality and efficacy of Traditional Medicine. The major problem on the improvement of TM market is the lack of the safety, quality and efficacy information of TM. The AMS put such issues into the main consideration not only for health reason but also for economic consideration.

Indonesia, as a tropical country, has been blessed with the mega-diversity of living organisms comprising of hundred thousands of plant and animal species. It is estimated that just a four-square-mile area of rainforest may contain as many as 1,500 different types of flowering plants and 750 species of trees. It has been noted that about 120 prescription drugs sold worldwide today are derived directly from rainforest plants. And according to the U.S. National Cancer Institute, more than two-thirds of all medicines found that have cancer-fighting properties are coming from rainforest plants. The potential of rainforest plants as the source of medicine open an opportunity to solve the problem on drug sufficiency for new emerging disease. The rainforest plants also could be developed as natural cosmetic, dye, pesticide and nutraceutical products. Deforestation in the rainforest ecosystem is growing rapidly, threatening many plants species which own medicinal properties. In facts, this kind of species has sometimes not been identified yet.

Some of the medicinal plants from the rainforest produce compounds that can be used to treat malaria, heart disease, bronchitis, hypertension, rheumatism, diabetes, muscle tension, arthritis, glaucoma, dysentery and tuberculosis, and other health problems. Recently, many compounds commercially available like anesthetics, enzymes, hormones, laxatives, cough mixtures, antibiotics, and antiseptics are also derived from rainforest plants and herbs. The research activities related to drug discovery and drug development from rainforest plants leads to the improvement of technology and human capacity. This proposal is presented to be endorsed in the APEC Life Science Innovation Forum Planning Group meeting in Jakarta, Indonesia.

**II. APEC and The Development of Medicinal Plants and Traditional Medicine**

APEC should encourage to carry out the following proposed actions, individually or collectively.

**A. Research and Development on Medicinal Plants and Traditional Medicine**

**1. Research on safety, efficacy and quality of TM**

**APEC economy should establish the appropriate research guidelines on safety, efficacy and quality of Traditional medicine.**

The common misconception about the absence of side effects and toxicity of natural products can lead to uncontrolled and exaggerated consumption, resulting in severe intoxication and acute health problems. The use of Traditional Medicine is sometimes without appropriate awareness and information about the adverse effects. The main focus of the

research on safety, quality and efficacy of Traditional Medicine is to provide the appropriate information of Traditional Medicine which could be accepted by physicians or CAM practitioners. Further, such traditional medicines are able to be used in the formal health care or be driven to broader market.

## **2. Research on Drug Discovery and Drug Development**

**APEC economy should give the main priority to facilitate the research on drug discovery or drug development based on natural product chemicals.**

In the future, plant-derived compounds will still be an essential part of the therapeutic array of medicines available to the physician. Recently, there are a number of diseases that are not responsive to the standard medicine or become resistant, and also the new emerging disease need of sufficient and efficacious medicine. Many plant-derived compounds have been used as drugs, either in their original or semi-synthetic form. Plant secondary metabolites can also serve as drug precursors, drug prototypes, and pharmacological probes. Recent developments in drug discovery from plants, including information on approved drugs and compounds now in clinical trials, are presented. There are also several plant extracts or phytomedicines in clinical trials for the treatment of various diseases. Medicinal plant has also been used to produce some healthy food, natural dye, and natural cosmetic in many cultures since ancient times, and this trend continues till today. The research on drug discovery and drug development have been conducted to determine their safety and their efficacy as well as to find out new active compounds from plants.

## **3. Clinical Study of Traditional Medicine**

**APEC economy should give the priority attention to provide the scientific information related to the safe and efficacious traditional medicine through appropriate TM clinical trials.**

In order that the community can have an access to good quality, safe and effective TM, health providers (doctors and traditional healers) have to provide rational traditional medicine preparation or TM formula/prescription. To reach this objective, the following programs should be taken into considerations:

- 1) The use of good quality of Traditional medicine is mandatory for health providers
- 2) The development of Herbal Vademecum and Herbal Formulary
- 3) Training and education for specialists, general physicians, health center doctors, concerning traditional medicine (herbal medicine)
- 4) Provide the facilities for TM care that could be easily accessed by people.

## **B. Development of Research Common Guidelines on TM**

**Apec economic should develop of research common guidelines on traditional medicine.**

To broaden the global market of TM, it is generally assumed that the safety, quality, and efficacy of TM should be able proved scientifically. In order to provide the standardized raw material for TM, it should be produce through good agriculture practices (GAP), good manufacturer practices (GMP) and good laboratory practices (GLP). The development of research common guideline on TM to get data on quality, safety and efficacy is a must.

## **C. Training and Capacity Building**

**APEC Economic should carry out an activities in order to improve the human capacity and infrastructure related to medicinal plant and traditional medicine development.**

Implementation of Integration of Traditional medicine in formal health care system may vary from country to country and it was influenced by limitation and supporting factors such as local conditions, human resources, facilities, and regulation. The use of Traditional medicine in Health care system need to be supported by scientific evidence on safety and efficacy. Medical doctor as an actor in health service should be familiar with the characteristics of traditional medicine, standard of service, methodology, and research ethic. In order to escalate those competencies, National Institute of Health Research and Development, Ministry of Health has facilitated the realization of medical doctor training, this proficiency is set up by 50-hours training in Medicoethicolegal, Research Methodology, Pharmacodynamic, Holistic Diagnostics, and Field Work.

## **D. Integration of TM in health Care Facilities**

**To promote the establishment of sufficient infrastructure related to the integration of Traditional medicine in health Care Facilities.**

### **III. Next Steps and Future APEC on Medicinal Plants and Traditional Medicine Development**

#### **A. Seminar and workshop**

**Propose a new initiative activity related to the Medicinal Plants and Traditional Medicine development by sounding to APEC members countries through seminar and workshop.**

The seminar was anticipated to include Material Transfer Agreement of medicinal plants specimens, IPR, supply chain of raw material, research guidelines, and TM promotion.

The management of integration of TM in the health care system should be prepared and developed from the downstream to upstream sectors. The integrated management of TM needs the availability of prominent raw materials, good manufacturing practice or good production practice, and appropriate utilization. The management of TM also has to be an integrated program from the production to the utilization. So it is needed the model of good of TM management as reference of public or other stakeholders. Therefore, the workshop on the developing integrated herbal medicine management should be held to provide the same view of Integrated TM Management.

#### **B. Collaborative research**

**Propose a collaborative research activities in order to share the research resources such as laboratory facilities, expert and funding.**

APEC should identify the research capacity and facilities for establishment of research collaboration among countries.

#### **C. Development of marketing cooperation of MP and TM**

**It is urge to develop the marketing or trading cooperation for Medicinal Plants product also Traditional Medicine which give the mutual benefit among the countries.**

The global market for the products of traditional medicine, especially those related to herbal medicine, has expanded significantly over the last decade and WHO estimates a rate of growth of between 5% and 18% per annum. The figures are impressive. In China, traditional herbal products, which are the most lucrative component of traditional medicine, represent between 30% and 50% of the total consumption of medicines. The retail sales volume is estimated at around \$6 billion in Europe and \$2.1 billion in Japan. In the United States of America, the National Health Interview Survey carried out in 2007, which included a comprehensive survey of so-called complementary and alternative medicine (CAM) used by Americans, showed that approximately 38% of adults used CAM during the past 12 months, with an estimated global expenditure of \$33.9 billion out-of-pocket. These figures accounted for approximately 1.5 percent of total health care expenditure in the United States of America, representing 11.2 percent of out-of-pocket health care expenditure.

#### **D. IPR**

Intellectual property right should be the priority issue that has to be addressed by APEC in the Medicinal Plant and Traditional Medicine development.

# Life Science Innovation Forum-APEC The Development of Medicinal Plant and Traditional Medicine

**Dr. Siswanto**  
**Indonesia**

1

## **Why Medicinal Plants and Traditional Medicine Matter?**

- Trad. Med is a part of health care system - self medication – folk medicines
- WHO estimated that more or less 80% of the world population still depends on traditional medicine for primary health care
- The provision of safe and effective Traditional Medicine could be a promising tool for increasing overall access to health care (equity)

2

## Cont...

- Many drugs were discovered from natural products.
- About 120 drug prescriptions in USA come from chemical compound that are derived from medicinal plants
- Nature has blessed Indonesia with a great variety of medicinal plants
- Indonesia possess approximately 30.000 species of flowering plants. Among of them, there are 9.600 species have medicinal properties.
- Need to aware of deforestation and other land use that impact on losses of several medicinal plants

3

## APEC MEDICINAL PLANT AND TRADITIONAL MEDICINE DEVELOPMENT

The proposed action encouraged for APEC economic:

### A. Research and Development of Medicinal Plants and Traditional Medicine

#### 1. Research on safety, efficacy and quality of TM

APEC economy should establish the appropriate research guidelines on safety, efficacy and quality of Traditional medicine.

4

## **APEC MEDICINAL PLANT AND TRADITIONAL MEDICINE DEVELOPMENT**

### **2. Research on Drug Discovery and Drug Development**

APEC economy should give the main priority to facilitate the research on drug discovery or drug development based on natural product chemistry.

### **3. Clinical Study of Traditional Medicine**

APEC economy should give the priority attention to provide the scientific information related to the safe and efficacious traditional medicine through appropriate TM clinical trials.

5

## **APEC MEDICINAL PLANT AND TRADITIONAL MEDICINE DEVELOPMENT**

### **B. Development of Research Common Guidelines on Medicinal Plants and TM and other guideline**

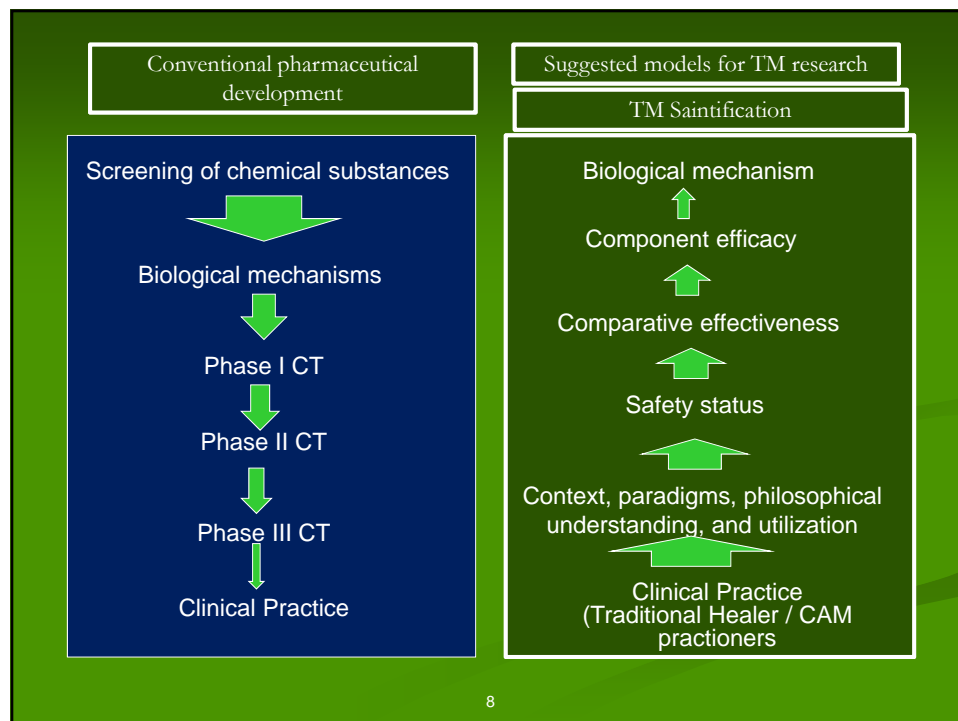
APEC economic should develop research common guidelines related to research and development of medicinal plants and traditional medicine and other guideline as appropriate

6

## The developing research common guidelines on TM is crucial:

1. TM is already practiced by community from one generation to another generation
2. It needs special approach to prove efficacy and safety of TM
3. Two issues of developing research common guideline on TM:
  - The philosophy and the Body of Knowledge of Traditional Medicine (Holistic medicine)
  - The approach of proving efficacy → “Reverse Pharmacology”

7



8



## **APEC MEDICINAL PLANT AND TRADITIONAL MEDICINE DEVELOPMENT**

### **. Training and Capacity Building**

APEC Economic should carry out an activities in order to improve the human capacity and infrastructure related to medicinal plant and traditional medicine development.

### **. Integration of TM in Health Care Facilities**

To promote the establishment of sufficient infrastructure related to the integration of TM in helath care

9

## **Next Step and Future APEC Activities on MP and TM Development (1)**

### **A. Seminar and workshop**

Propose a new initiative activities related to the Medicinal Plants and Traditional Medicine development should be sounded to APEC members countries through seminar and workshop (to promote awareness)

10

## Next Step and Future APEC Activities on MP and TM Development (2)

### B. Collaborative research

Propose a collaborative research activities in order to share the research resources such as laboratory facilities, expert and funding.

11

## Next Step and Future APEC Activities on MP and TM Development (3)

### c. Development of marketing cooperation of MP and TM

It is urge to develop the marketing or trading cooperation for Medicinal Plants product also Traditional Medicine which give the mutual benefit among the countries.

12

## Next Step and Future APEC Activities on MP and TM Development (4)

### D. IPR

Intellectual property right should be the priority issue that has to be addressed by APEC economic in the Medicinal Plant and Traditional Medicine development.

13

Thank You  
Terima Kasih



14