



Traditional Medicine in

Replublic of INDONESIA



Indonesian Traditional Medicine National Strategy and Scope of Cooperation



Traditional medicines have been widely recognized in low to medium income countries. In some developing countries, traditional medicines have been widely used for health services particularly at primary health care. On the other side, the use of traditional medicines in many developed countries has been popularly growing.

The use of traditional medicines in Indonesia is part of national cultivation and has begun from centuries ago, however, the effectiveness and safety has not yet been supported by comprehensive research. Taking into account this fact and achieving that Indonesia is the mega-center of herbal medicines in the world, it is regarded necessary to establish policy for national traditional medicines enable as reference for all parties involved.

One of Indonesian traditional medicines is Jamu, has been declared as Indonesian brand by Susilo Bambang Yudhoyono, President of the Republic of Indonesia on May 27, 2007 in Jakarta.



JAMU

Traditional Medicines as Cultural Inheritance

Natural resources of chemicals substance and traditional medicines preparations are national assets to be continuously explored, examined, developed and optimized of their benefits. As a nation possessing high bio-diversity and herbal natural resources represent assets with comparative value and the superior asset in the use and development for competitive commodity.

Indonesia possesses about 400 ethnics (ethnics and sub-ethnics). Each ethnic and sub-ethnic has wide knowledge inherited from generation to generation, traditional knowledge of medicines and medications. The evidence of use of traditional medicines in Indonesia from centuries ago are represented in the relief of *Prambanan* and *Borobudur* temple, written in *lontar leaf*, and the inheritance and cultivation in Kingdom Palaces to

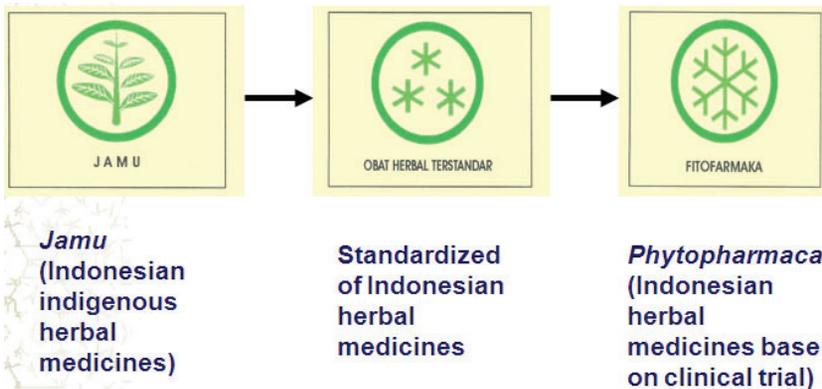


this date.

For Javanese and Madurese communities, traditional medicines have been widely known as “**jamu**” (herbal medicines) either in sliced forms or servable powder. Rural communities have long time ago consumed *temulawak* (*Curcuma xanthorrhiza*) to maintain their physical fitness. Written information on herbal medicines kept in Surakarta Palace Library are “*Serat Kawruh*” and “*Serat Centhini*”. *Serat Kawruh* presents systematic information on herbal medicines, which contain 1,734 preparations made of natural elements and which use method is furnished by spells.

The use and development of traditional medicines in such areas has been traditionally inherited by experience/empirical facts later developed through scientific research made through pre-clinic and clinic test.

STRATEGY FOR PRODUCT DEVELOPMENT POSITIONING



Traditional medicines are based on “inheritance” and empirical approach known as “**jamu**” (herbal medicines), meanwhile those generated from scientific approach through pre-clinical test, defined as **standardized herbal**. For those which have passed clinical test defined as **phytopharmaca**.

a. Considerations

Some factors contribute to the development, usage and preservation of *jamu* :

1. Large number of original formulation of medicine. There



are almost 336 tribes spread out all over the country where each of them has its own traditional formulation. Some origin of the formulation can be traced back through some original records which are kept in palaces in the past times. Each palace has specific formulation, especially the palaces in Central Java.

2. Huge source of medicinal plants. Experts figured out that Indonesia is the second biggest country in the world for its biodiversity.

3. The efficacy of *jamu* has been proved empirically among Indonesian people.

b. Facts

1. 70-80% of the population are still rely on the effectiveness of *jamu*. Their knowledge on *jamu* have been proved empirically through generations.

2. Poor facilities in primary health care system, especially in remote areas.

3. Top achievement of *Jamu* industries occurred before the monetary crisis in 1998, whereas the growth of *Jamu* industry reached 20 %.

4. Advantages of *Jamu* :

- Greatly overflow of raw material
- Sufficient human resources (empirical use of traditional

healer)

- Community beliefs: *Jamu* has mild or no side effects
- *Jamu* is relatively affordable
- Be able to fulfill the need of 240 millions people of Indo-

nesian citizens

- There have been several basic researches conducted by lecturers, but still limited to the academic purpose

5. Prediction to 2010 :

- Strategic Planning of 2005 - 2010
- Quality Standardization
- Assistance of Good Manufacturing Practice
- Traditional medicines registration
- Control of production, distribution and advertising
- Research and Development
- Public Promotion / Social Marketing



- Export development
- Cross-sectoral management on cultivation medicinal

National Policy on Traditional Medicine

National Policy on Traditional Medicines hereinafter referred to as **KOTRANAS** is an official document setting forth the commitment of all parties in establishing the national objectives, goals, priorities, strategies and roles of related parties in achieving the essential components of the policy for national development particularly in health sector.

The objectives of KOTRANAS include:

1. Promoting the sustainable use of natural resources and traditional preparations as traditional medicines in effort of improving health services.

2. Ensuring cross-sectoral management of natural potentials to achieve high competitiveness as an economic source of community and sustainable income of the nation.

3. The availability of quality, effective and safe traditional medicines, scientifically-tested and widely used for self-medication and formal health services.

4. Setting traditional medicines as superior commodity providing various benefits to improve community economic growth, creating employment opportunity and poverty reduction.

The scope of KOTRANAS includes development of traditional medicines to promote health and economic development in gaining quality human resources. Traditional medicines in KOTRANAS include preparations or compounds of herbal, animal, mineral and marine biota or galenic preparation which empirically utilized and has passed pre-clinic/clinical tests such as standardized herbal and phytopharmaca, to facilitate the development of traditional medicines for its utilization in formal health services and explore of Indonesian natural resources.

KOTRANAS means a comprehensive policy on traditional medicines from upstream to downstream, including cultivation and conservation of medicinal resource, safety and efficacy of traditional medicines, quality, accessibility, rational use, supervision, research and development, industrialization and commercialization, documentation, database, devel-



opment of human resource as well as monitoring and evaluation.

National Strategy

1. To promote the sustainable use of Indonesian natural resources as traditional medicines to improve the health services and economy.

Indonesian natural resources should be optimized to improve health and economic services by taking into wise consideration of the conservation through the following attempts:

- a. Plant cultivation based on superiority of biological diversity in each region and conservation of natural resource conservation for development of traditional medicines and other objectives by involving all stakeholders.
- b. Useful research for development of traditional medicines and other relevant objectives and purposes.
- c. Consistent application of standardized raw materials and commodities of traditional medicines, including foreign traditional medicines.
- d. Setting regulation on development of traditional medicines.
- e. Development and protection of intellectual property rights in connection with indigenous traditional medicine ingredients and the results of Science and Knowledge Development on Indonesian bio-diversity resource based on Natural Biological Source.

2. Assuring safe, quality and efficacy of traditional medicines and protecting communities from using inappropriate traditional medicines.

Supervision and control over traditional medicines should be initiated from the preparation of raw materials, production until delivery to end consumers as inseparable part of the activities.

In accomplishing these objectives, the following measures must be adopted:

- a. Assessment on safety, quality and efficacy through registration, assistance, supervision and control over import, export, production, distribution and services of traditional medicines as integral part, high competency, accountability, transparency and independency.
- b. Consistently grounds and law enforcement resulting in punishment against each violation.



c. Amendment to production materials and commodities of traditional medicines.

d. Community empowerment through provision and distribution of reliable information as to prevent the risk from sub-standard and misuse.

e. Revision and development of standards and guideline relevant to the quality of traditional medicines.

3. Availability of traditional medicines possessing proven efficacy as scientifically tested and widely used for self-medication and formal health services.

One of the issues related to the limited use of traditional medicines for self-medications and formal services is the absence of scientific test showing the efficacy. Hence, research must be initiated through the measures below:

a. Reliable research or study on the efficacy and unwanted effect of traditional medicines with cost-effectiveness ratio.

b. Setting regulation to promote the acceptance of well proven traditional medicines in formal health care.

c. Promotion and advocacy of traditional medicine use.

d. Proper training aimed at up scaling the knowledge of collector and production personnel of traditional medicine.

e. Improved international cooperation on technical aspects and exchange of knowledge of traditional medicines.

f. Coordination among competent authorities in handling medicinal plants, mainly in exchange of information related to species of medicinal plants discovered in the survey.

4. Promoting the development of accountable and transparent industry in traditional medicines to serve as host in the country and to gain recognition from other countries.

The growth of traditional medicine industry is the responsibilities of all stake holders : government, communities and industrial sectors.

a. Improved cooperation and coordination among the stakeholders in adherence to the principles of Good Governance.

b. Allowing incentive and facilities for development of traditional medicines taking into account the affordability of community.



- c. Creation of conducive climate for the development of traditional medicines taking into account the development of global, regional and local markets.
- d. Improved promotion of traditional medicines in international market by utilizing various development of communication technology.
- e. Active role in harmonizing regulations and standards in traditional medicines at regional and international level.

The Integration of Traditional Medicines into the Health Care and Education System

a. Introduction

A clinic for complementary and alternative therapy has also been established at Dr. Sutomo General Hospital, the biggest general hospital in Surabaya since 1999. It provides various complementary and alternative therapies, which includes herbal therapy, aromatherapy, massage and acupuncture. The practice is conducted in both conventional and traditional ways. There are medical doctors, pharmacists, masseurs, biologists, therapists and acupuncturists. Diagnosis of the diseases is conducted by doctors in a conventional way, and doctors will prescribe herbal medicines and suggest other complementary and alternative therapies.

Plant materials for herbal therapy are obtained from a special medicinal plant garden also owned by the clinic or from the market. Preparation of herbal medicine is conducted in a special room.

From the existing collaboration between Dr. Sutomo General Hospital and Airlangga University, there is a mutual cooperation between clinic for complementary and alternative therapy of the hospital with the diploma program of the university. As complementary and alternative therapy is developing fast in Indonesia, graduates of the program will have an opportunity to work at the hospital clinic besides running their own private practice.

At Tawangmangu–Central Java, The Medicinal Plant and Traditional Medicines Research and Development Center Office NIHRD MoH, conducts clinical observation research using standardized simplisia. The material is obtained from own plantation, with more than one hundred trained farmers. It is also conduct R & D on cultivation and conservation



of herbal medicine and material as well as ethnobotani-medic.

b. Efforts

1. Considering supportive factors and facts, it is necessary for Indonesia to enhance the performance of *jamu*, especially in order to be able to use it more effectively in the primary health care systems.

First priority must be given to carry out scientific researches more intensively to find out the original philosophy, recipes, method of diagnosis of *jamu*. Such findings are very important for the standardization of the practice, so that medical doctors are able to serve patients with alternative and complementary practices. Standardization of the practice of traditional medicine is the only way to reduce and stop illegal practices that are still being conducted by self-appointed healers. Such practices are especially popular among people who live in remote areas with poor primary health care facilities. It is through standardization, that *jamu* in the long run is able to get international recognition.

Nowadays, most universities and research institutions in Indonesia, have conducted researches, which include:

- i. Research on traditional medicines of some tribes, which includes original formulation, usage, preparation, activities:
- ii. Research on standardization of plant materials, determination of chemical constituents, bioactivity tests, toxicity tests, pre-clinical and clinical tests
- iii. Collaboration between research institutions and industrial sectors for product development

2. Establishment of Diploma program in Traditional Medicine

In 2005 Airlangga University has developed a three - year Diploma program in traditional medicine, namely BATRA, stands for *Pengobatan Tradisional* or traditional medicine. It is a vocational program where students learn about various kinds of complementary and alternative therapies, including acupuncture, herbal therapy, acupressure and massage. It is aimed to provide skilled human resources able to conduct practice in various complementary and alternative medicines. Since most of traditional healers do not have a formal educational background as healers or therapists, their private practices are not standardized. There-



fore Airlangga University has the initiative to develop a vocational program in traditional medicine and becomes the first university that provides human resources with a special skill in traditional medicine who are able to run their private practice or work together with medical doctors in the practice of complementary and alternative therapy. Under the support of the Department of Health and licensed by the Department of National Education, the diploma program provides training and supervised practice especially in skills on herbal therapy, acupuncture, acupressure and massage. The curriculum of the program will be standardized in an effort to develop a specific Indonesian traditional medicine system of education. This will be the only such program in Indonesia and therefore, will be the center for education on traditional medicine of Indonesia. The school itself is equipped with a small clinic located next to the school building, which is prepared especially for students who are going to practice acupressure, acupuncture, massage and herbal medicine. Students will undergo training or instruction in preparation for a particular role, function, or profession in traditional medicine. They are prepared to assist medical doctors by suggesting complementary and alternative treatments to patients that have been diagnosed of their health problems. They are also trained to run a special traditional medicine clinic which provide acupuncture, herbal therapy, acupressure, and massage under the supervision of medical doctors. Some acupuncture instruments are created by staffs of the Laboratory of Biophysics Faculty of Mathematics and Natural Sciences.

Since its establishment, there are approximately 90 students taking the program and 14 students of the first batch have already been graduated.

3. Establishment of Complementary and Alternative Clinic

A clinic for complementary and alternative therapy has also been established at Dr. Sutomo General Hospital, the biggest general hospital in Surabaya since 1999. It provides various complementary and alternative therapies, which includes herbal therapy, aromatherapy, massage and acupuncture. The practice is conducted in both conventional and traditional ways. There are medical doctors, pharmacists, masseurs, biologists, therapists and acupuncturists. Diagnosis of the diseases is conducted



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4. Establishment of Model Community Health Care Center for Complementary and Alternative Service

A model Community Health Care Center for complementary and alternative service, locally called Pusat Kesehatan Masyarakat, has been established in Surabaya, East Java. It is the first center where medical doctors conducted diagnosis in a conventional way and give patients the right to choose complementary and alternative medication, which include herbal therapy, massage and acupuncture. The center is also conduct actions to ask participation of the community in the arrangement of medicinal plant gardens.

To expand the traditional medicine program for community, 12 Centers for Development and Implementation of TM in 12 provinces, which are training centers for healers and TM clinic/services, have been established.

Scope of Regional Cooperation

1. Cultivation, Standardization and Quality Control

Quality standard of herbs as raw material depends on how the cultivation standard being implemented, how herbs collection being done and how the post harvest technology being used. It is the very long process after harvesting the plants (or part of plants), affecting the quality of the herbs.

Herbs have been cultivated by farmers in particular appropriate



areas. The appropriate area for each medicinal plant should be brought together and put in geographic map. Mapping should be done prior to the development of the standard.

Cultivation standard has been developed since years ago, ignoring the mapping of particular cultivation areas.

The most extensive cultivation studies have been conducted for several rhizomes. Many rhizomes used for TM also been used for spices, flavor, corrigentia. Rhizomes cultivation has been widely put into practice by many TM farmers. TM farmers work in groups at particular area. They have been receiving regular training and supervision from agriculture supervisors. The intensive control on cultivation of herbs mainly conducted at upstream area, namely TM herbs plantation.

Standard of cultivation must have been started with the provision of the quality seeds. Provision of seeds has been planned last year. The result has not been evaluated yet.

Standard of Herbal Quality,

- Materia Medica Indonesia, (MMI) 224 monographs
- Standard of extracts - 35 monographs
- Indonesian Herbal Pharmacopoeia, (the first edition) has

been finished. This first edition consist of 98 monographs of herbs and extracts. The monographs in Herbal Pharmacopoeia are the selected monograph from MMI and Standards of extracts.

According to the WHO Strategy of TM, Indonesia has development **National Policy on TM, been issued at 2007**. Indonesia has also developed scheme of quality control of TM products, through compulsory registration of TM product in order to ensure the Quality of the TM products. The development of IHP is the effort of Indonesia to implement the second strategy : to encourage the strong an reliable evidence based of QSE of TM.

No standard method being developed up to now. Collection of herbs done naturally by farmers, in accordance with their need. This pattern herb collection is an unsafe practice towards an endanger medicinal plants. One of the example is *Centella asiatica*.

2. Product Development and Trading

Herbs farmers start form common farmers. Mostly they start



making money from cultivating medicinal plants after long experience of being a farmer. Usually they were able to see a great chance in this business. The herbs they produced have a good quality if they strictly follow the provided SOP of cultivation. After the harvest time, the difficulties and constraints will come up. The herb products (fresh herb) that being harvested with good procedure immediately enter the uncertain area. Post harvest technology has not yet established properly. At this period, the previously good quality of herbs, has deteriorated, the quality decrease. The consequences of these problems is the necessary extra treatment of raw material at the TM industries. TM industries usually apply the whole process of post harvest start from sorting, cleaning, washing, etc in order to obtain the better quality of herb. It should be kept in mind, that the improvement quality of the raw material, is limited on the physical appearance. The loss of chemical content or volatile oil, or other unstable substances is unable to replace. This is the main problem in Indonesia.

TM industries in Indonesia categorized in small and big industries. There are some limitations in implementing GMP requirements. TM products in Indonesia mostly consist of herbal products, only very few animal products or minerals. Market authorization is conducted by NADFC. All herbal products that are marketed in Indonesia are compulsory for evaluation and should be registered prior to being marketed. Regulation for market authorization has been implemented in line with regulation on GMP requirements and GMP regulation.

There are three categories of quality, safety, efficacy evaluation prior to registration, namely (1) jamu, (2) standardized herbal and (3) phytopharmaca.

Jamu is herbal products, having brand names, consist of one or more of powder herbs, which are widely used by the community based on the empirical evidence.

Standardized herbal is herbal products, having brand names, mostly consist of standardized extract alone or in combination, one or more of powder herbs. The therapeutic use should be based on pre-clinical studies evidence.

Phytopharmaca is herbal products, having brand names, consist of standardized extracts alone and combination. The therapeutic use should



be based on clinical studies.

At the moment, around 5000 herbal products being marketed. More than 90% of the marketed products are jamu. Due to the limited qualified clinical studies up to now, the phytopharmaca is available only very few.

3. Implementation in self medication and formal health services

TM in Indonesia has been used since centuries. In the old days, TM were prepared by housewives or traditional healers to used at their own family or village community. These TM are not widely spread out. Some of the traditional healers sell the products usually in the form of concoction, around the village within a walking distance. The name is jamu gendong./jamu peddlers. This products are not compulsory for evaluation and registration. The other products that are not subject for safety evaluation and registration are the dried herbs without advanced process, and marketed at traditional market. The packing is very simple, without brand name. Products other than those two types mentioned above are subject to safety evaluation and registration.

A clinic for complementary and alternative therapy has also been established at some Provincial General Hospital (Teaching Hospital). It provides various complementary and alternative therapies, which include herbal therapy, aromatherapy, massage and acupuncture. The practice is conducted in both conventional and traditional ways. There are medical doctors, pharmacists, masseurs, biologists, therapists and acupuncturists. Diagnosis of the diseases is conducted by doctors in a conventional way, and doctors will prescribe herbal medicines and suggest other complementary and alternative therapies.

Sharing experiences and practices will be needed on selected field, especially in Commerce among ASEAN member country. Some expectations sounded as follows:

1. Indonesian Traditional Medicines can be traded among ASEAN member countries.
2. Priority on Licensing, with reciprocal approach between countries involved.
3. Information exchange, about affordable and sustainable of raw materials.
4. Expand the scope of trading beyond regional cooperation.