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**Systems and National Experiences for Protecting Traditional  
Knowledge, Innovations and Practices –  
Sri Lanka**

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**SYSTEMS AND NATIONAL EXPERIENCES FOR PROTECTING TRADITIONAL  
KNOWLEDGE, INNOVATIONS AND PRACTICES – SRI LANKA**

by

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**I. INTRODUCTION**

1. Traditional knowledge in Sri Lanka is mainly in the formalised systems such as Ayurveda, Siddha, and Unani, which have been largely introduced into the island. There is very little traditional knowledge available in non-formalised systems, as there are few isolated communities in Sri Lanka. The island is too small to permit total isolation while a well developed social infrastructure providing free access to good health and education to all sections of the population has made it less attractive for communities to remain isolated.
2. The most important formalised system is Ayurveda, which originated in India and even forms part of the overall health services provided by the government. Many of the raw materials used are not grown in Sri Lanka and regularly imported from India strongly suggesting the Indian origin of the system.
3. However over the years the Ayurveda system has become modified and developed into a system differing but not very substantially from the Indian Ayurveda system. Some of the plant materials used in Ayurveda drug preparations in India have been replaced by materials from related plants growing in Sri Lanka, some by similar looking but unrelated material and still others by completely unconnected material. What is remarkable is that some of these unrelated and unconnected materials show chemical similarities to the original Indian raw material.
4. Other formalised systems in use in Sri Lanka include the Unani system, a system that originated in Greece and was subsequently enriched by the Arabs. Unani is practised largely by the Muslim population of the country suggesting that Arab traders introduced it into the island. The Siddha Ayurveda system that is closely related to the main Ayurveda system is practised mainly in the Tamil speaking areas of the country and owes its origin to a modified Ayurveda system developed in Tamil speaking areas of India.
5. The Government Department of Ayurveda, Sri Lanka (DASL) has documented the Sri Lankan formalised medicinal system in the three volumes of Part I of the Ayurveda Pharmacopoeia (DASL 1976; DASL 1980; DASL 1985). The Ayurveda Pharmacopoeia identifies the raw materials used by physicians using the indigenous system, the drugs that should be described for the different diseases and the methods of preparation of the different drugs. Although the Pharmacopoeia claims to deal with all three formalised systems, it concentrates mainly on Ayurveda. Plants used in the local Ayurveda system have also been botanically described and many of these have been investigated by scientists in the Universities and research institutes for their biological activities. Ayurvedic preparations are made on an industrial scale by three companies in Sri Lanka.

6. The non-formalised system in Sri Lanka includes Desiya Chikitsa (National Treatment) and the community relies on this system mainly for the treatment of eye diseases, fractures and dislocations, burns and scalds, boils and carbuncles. Some of the practitioners specialising in fractures and dislocations are of such high reputation that they are often the first choice for treatment even by sections of the community accustomed to allopathic (Western) medicine. The traditional knowledge involved has been protected as family secrets handed over from one generation to another.

7. Non-formalised traditional knowledge in agriculture has been largely lost. There are a few sources of food materials, which are generally consumed by minor sections of the community, but with the assimilation of these communities, this knowledge has also become public and the habits popularised. Traditional seeds were regularly used in the past but they have been replaced over the years. The Green Revolution saw most of our farmers moving away from traditional rice to modern hybrid varieties. Some of the germ plasm has been preserved locally but most of them are available in International Germ Plasm Depositories. It is unlikely that Sri Lanka's prior consent will be obtained or that it will share in any benefit if its traditional germ plasm available in these depositories is used in the development of new commercial seeds.

8. There are five plants, which according to folklore have been used for the protection of plants against disease. These plants have been studied for their pesticidal activity and found experimentally to have weak to moderate plant protection properties. It is possible that they were effective against the old varieties of pests but are unable to counter the more pesticide resistant varieties of pests found today. Their role could also have been that of a green manure rather than that of a pesticide.

9. There are a few communities, which although not physically isolated have been separated from the mainstream of the community for historical and social reasons. The aboriginal people called the Veddahs are a small community consisting of a few families, many of whose more public members are believed to be imposters seeking to profit from tourist and academic interests in their lifestyle. The Rodiyas are another group, which was isolated by social ostracism, but this group too seems to have been progressively assimilated into the general population. There is also a community of gypsies, who speak their own dialect. While each of these groups have their own traditional treatments for disease there has been little or no attempt to document them. These communities have over the years become assimilated into the larger community, a process hastened by the smallness of the island and the good social infrastructure prevailing therein. Free health services and free education facilities are accessible to communities in all areas of the island and these provide a powerful incentive for traditional communities to move out of their traditional life styles.

## **II. INTELLECTUAL PROTECTION AND TRADITIONAL KNOWLEDGE**

10. Sri Lanka's traditional knowledge therefore has been lost and is being lost because of modernisation. This brings up the question as to whether developing countries should attempt ensure the preservation of traditional knowledge by preventing changes in the life styles of the holders of traditional knowledge. Such a strategy will in effect be a denial of the "benefits" of modernisation – improvement in living standards, social mobility, etc – to these communities.

Although the “benefits” of modern lifestyles over traditional lifestyles can be questioned, there can be no justification for preventing the modernisation of communities with traditional lifestyles merely to preserve traditional knowledge. The only way of preventing the loss of traditional knowledge is through documenting the traditional knowledge. However the conventional system of intellectual protection not only does not encourage the disclosure of traditional knowledge for documentation but also appears to militate against the rapid documentation of traditional knowledge.

11. Sri Lanka has been a member of the Paris and Berne conventions for several years and its intellectual property legislation Code of Intellectual property Act of 1979 meets already much of Sri Lanka’s TRIPS obligations. Although IPR legislation is currently being amended to comply with TRIPS, the island does not at this point of time, plan to permit the patenting of life forms. An alternative *sui generis* system for plant variety protection as required by TRIPS, although a subject of much discussion, is also still not in place.

12. However conventional mechanisms for the protection of intellectual property appear ineffective in protecting traditional knowledge. The high cost of effective protection by patents is far beyond the means of most holders of traditional knowledge and the limited period of protection does not fully compensate for the disclosure of the knowledge jealously guarded for hundreds of years. Furthermore such protection is legally weak since the novelty of traditional knowledge used over several centuries may be legally challenged and holders of traditional knowledge have neither the competence nor the wherewithal to meet these challenges. While trademarks may be useful to protect expressions of traditional knowledge like handicrafts, they are of no use in protecting traditional knowledge itself. The same will be true for geographical indicators if and when the international community permits their use for the protection of traditional knowledge. Copyrighting of traditional knowledge will be ineffective, as such copyrights would be difficult to enforce.

13. Traditional knowledge that has not been documented survives today usually as a “family secret” similar to a trade secret. The knowledge is passed down from generation to generation and is closely guarded from those outside the immediate family. However traditional knowledge maintained as family secrets have a tendency to leak or gradually move into the public domain and their leakage cannot be effectively prevented unlike trade secrets in the corporate sector.

### III. COMMERCIAL EXPLOITATION OF TRADITIONAL KNOWLEDGE

14. Formalised traditional knowledge or leaked non-formalised traditional knowledge often forms the basis for scientific investigations usually made by foreign and local scientists on Sri Lankan plants. These investigations are aimed at the discovery of substances with commercial potential for exploitation as drugs or pesticides and are often undertaken in industrial countries using biological resources from developing countries. Agreements on benefit sharing are the exception rather than the rule and rarely do developing countries receive any sharing of the benefit from commercial exploitation. A recent example is a Sri Lankan plant, *Salacia reticulata*, long reputed and locally exploited for its anti-diabetic properties. The plant and a related plant found in Sri Lanka, *Salacia prinooides*, have been investigated in Japan and the United States for this activity and its hypoglycaemic constituents have been the subject of several publications

(Yoshikawa *et al.*, 1998a, 1998b, 1998c; Shimodo *et al.*, 1998) and patents by Japanese (Yamahara, 1999) and American (Inman and Reed, 1997) scientists, with no reference to Sri Lankan participation. It is unlikely that any commercial exploitation of this discovery will result in the sharing of benefits with Sri Lanka or the holders of the traditional knowledge involved.

15. Traditional knowledge exploited for the development of commercial drugs not only does not provide any monetary benefit to the holders of the traditional knowledge but is also in the long term against the interest of traditional medical practitioners and traditional forms of medicine.

16. Many of the Eastern formalised medicinal systems use a holistic approach in dealing with disease. Disease is considered to be caused by an imbalance in the human system in one of a number of elements contributing to good health. These systems therefore attempt to correct this balance by administering complex mixtures of medicines together with a treatment regime extended over several months so as to enable patients to correct the imbalance in these elements and regain their health. Western medicine on the other hand treats diseases more rapidly by partly addressing the symptoms of the disease and targeting specific metabolic reactions, which are thought to induce these symptoms.

17. Thus many of the drugs used in Eastern medicinal systems do not contain constituents which are strongly active against the particular disease and their activities are often not recognized by the bioassays used in Western medicine. However if such a component is discovered and is successfully developed by a pharmaceutical company into a drug, the work would contribute to an enrichment of allopathic medicine by strengthening the range of medicines available to treat the particular disease. While it may provide us with a better understanding of the basis of traditional medicine, the overall effect on traditional medicine would be negative. An effective drug developed from a preparation used in traditional medicine and successfully marketed in the East will encourage people who normally rely on traditional medicine to shift to Western medicine.

#### **IV. ACCESS AND BENEFIT SHARING**

18. Very few developing countries have legislated to meet their obligations to the Convention on Biological Diversity (CBD) and even fewer have set up mechanisms to implement the legislation. In Sri Lanka, several Committees have sat, draft legislation has been formulated, a procedure for monitoring research involving biological diversity and a code of ethics for scientists working in the field have been proposed, but the laws have still not been brought before Parliament.

19. Since there are no laws in place today, foreign and local scientists have had free access to the local biodiversity and traditional knowledge. Even if some formal agreements have been signed, the contracts are often very weak and provide for very little benefit sharing. Even if some little benefit is shared, this rarely seeps down to the actual holders of traditional knowledge.

20. The uneven nature of property relations within the world from those existing between nation states right down to those within different communities determine the distribution of

benefits from the successful exploitation of traditional knowledge. Benefits therefore mainly accrue to the developed world, with very little sharing of the benefit with sources of traditional knowledge in the developing world. If some of the benefit reaches countries like Sri Lanka that too similarly will mainly accrue to those in the towns rather than to those in the villages and to the elite in the village rather than to the actual holders of traditional knowledge.

21. The only way of ensuring the prior informed consent of holders of traditional knowledge and greater benefit sharing in the exploitation of the knowledge is through regulated access to the country's biodiversity governed by effective CBD legislation. Unless such legislation is in place, no developing country can act against the unethical exploitation of their traditional knowledge, even if the sources of materials and traditional knowledge are recorded in patents.

22. Since traditional knowledge is often community based rather than individual based there is a case for setting up a community trust fund which could administer the distribution of the benefit to the communities involved. However, the experience of developing countries in the distribution of benefits to less powerful sections of society has often been that high overheads drastically reduce the benefit actually reaching the targeted recipients.

#### V. "SUI GENERIS" SYSTEM

23. Since conventional intellectual property rights regimes are ineffective in protecting traditional systems, new *sui generis* systems must be developed for this purpose. A recent proposal by Drahos (2000) which has been further developed in a report to the European Union Directorate on Trade (CEAS Consultants, 2000) contains many elements worthy of consideration in the development of a suitable *sui generis* system. The proposal envisages the establishment of a global biocollecting society similar to a copyright collecting society, which would be a depository of traditional knowledge. The society would license the use of the traditional knowledge to potential users and monitor the use of the knowledge, ensure that royalties are collected and distributed to the holders of the traditional knowledge and establish a disputing settling mechanism.

24. The differences between traditional knowledge systems in the different regions are great and there may be a case of several regional biocollecting societies rather than a global biocollecting society. A mechanism to establish global priority for the knowledge deposited may be necessary and this could be administered by a UN body. Similar mechanisms e.g. the patent cooperation treaty are available in the conventional IPR systems. Community and country biodiversity registers may be effective vehicles for the national collection of traditional knowledge for deposition in the regional society.

25. The licensing of traditional knowledge to users should be non-exclusive and royalties should be paid over a longer period, perhaps the period of protection envisaged under the copyright rather than under the patent system. It may involve an upfront payment for access to the knowledge and two levels of royalties, a higher rate during the period of validity of any patents arising from the traditional knowledge and a lower rate during the period of non-patent commercial exploitation.

26. Natural substances obtained from traditionally used medicinal preparations even when active are rarely suitable for commercial exploitation. The natural substances are often found to decompose slowly in the presence of light and air once they are separated from the complex mixture. Furthermore, natural sources are often unable to provide the large amounts of material required commercially.

27. The product that is finally marketed although born from an idea emerging from traditional knowledge can be similar or very different from the natural substances present in the medicinal preparation and is often a synthetic product capable of facile industrial production. Any *sui generis* system which is developed must therefore ensure that benefits are shared by the holders of traditional knowledge even when the marketed product is not identical to that present in the preparations used traditionally. The proportion of the benefit being shared could depend on how closely the marketed product resembles the material traditionally used.

28. Although most drugs today are successful only if a synthetic analogue can be made and marketed, there are rare instances when a naturally occurring substance can be successfully marketed. Benefits to the country and the community can then accrue not only from intellectual property but also through local exploitation of the material, provided the biodiversity is exploited in a sustainable manner. A plant product with a high demand may even lead to the growth and development of an agriculture based industry, which could indirectly contribute to improving the living standards of the community.

## VI. CONCLUSIONS

29. Traditional knowledge is being rapidly lost throughout the world and is a consequence of the modernisation of traditional communities, which should not be prevented. The documentation of the traditional knowledge held by these communities has taken on a new urgency. Conventional IPR regimes however discourage the disclosure of traditional knowledge and hamper the documentation of traditional knowledge. There is therefore a need to develop an alternative *sui generis* system which will meet the needs of the holders of traditional knowledge. Such a system will not only ensure the sharing of benefits but also create an environment which would encourage the disclosure of traditional knowledge that would otherwise be lost to the world. The development of such a *sui generis* system is however no easy task and required the concerted effort of the world community.

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