



REPORT  
OF THE  
SOUTH ASIAN REGIONAL CONFERENCE  
ON  
TRADITIONAL MEDICINE  
AND  
RIGHT TO HEALTH FOR ALL

Bangalore, India  
13-15 December 2006



Proceedings of a South Asian Conference held in Bangalore (India) from 13 to 15 December 2006, organized by Italian Association Amici di Raoul Follereau (AIFO/Italy) as part of a joint project under COE (Italy), co-funded by Directorate General of Development Cooperation (DGCS) of Italian Foreign Ministry.

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# SOUTH ASIAN REGIONAL CONFERENCE ON TRADITIONAL MEDICINE

## INTRODUCTION

This conference was part of a joint project by AIFO/Italy (Italian Association Amici di Raoul Follereau) in collaboration with 3 other Italian Non-Governmental Organisations (COE, MLAL and Monserrate). Under this initiative, each Italian NGO was responsible for organisation of one regional conference while the overall coordination of the initiative was under COE/Italy (Centro Orientamento Educativo). This initiative was co-funded by **Directorate General of Development Cooperation** of the Italian Foreign Ministry.

The conference in India for the South Asian region was organised by AIFO/Italy. The main workshop was held in Bangalore from 13 to 15 December 2006. There were some additional preparatory meetings before these dates. Participants for this conference came from Bangladesh, Bhutan, India, Nepal and Sri Lanka. The first two days of the main meeting were held at Monarch Hotel in Bangalore, while the last day of the conference was organised in the auditorium of Government Ayurvedic Medical College of Bangalore.

The conference in India was organised in collaboration with **International People's Health University** (IPHU) of the People's Health Movement (PHM) with technical contribution from World Health Organisation's (WHO) South-east Asia Regional office (SEARO) in New Delhi.

**Dr. K. Balasubramaniam** (Sri Lanka) provided the technical coordination for the conference. *This report is organised in two parts:*

- **The first part** presents the consensus statement on Traditional Medicine developed by the conference participants and a summary report of the different presentations and discussions during the conference. The summary report was prepared by *Dr Rakhal Gaitonde* from People's Health Movement (India).
- **The second part** presents the full text of some of the papers presented during the conference, prepared by the speakers. It also includes some papers prepared by Dr. S. Deepak on the basis of power-point presentations of the individual speakers, who were unable to provide full texts.

## Acknowledgements

Apart from the official partners and collaborators mentioned above, many other persons and organisations, participated actively for the organisation of this conference. The conference would not have been possible without hard work and commitment from Amici India, representative of AIFO/Italy in India. Acknowledgement is also due to the staff and students of Government Ayurvedic Medical College of Bangalore. We also thank Dr Ravi Narayan from PHM India for all his support in organising this conference. Finally, thanks are due to all the speakers and participants in this conference.

## PART 1



## **CONSENSUS STATEMENT OF THE SOUTH ASIAN REGIONAL CONFERENCE ON TRADITIONAL MEDICINE AND RIGHT TO HEALTH FOR ALL**



### **PREAMBLE**

We the delegates of the South Asian Regional Conference on Traditional Medicine and Right to Health for All, coming from Bangladesh, Bhutan, India, Nepal and Sri Lanka, representing government departments, academic institutions, NGOs and people's organizations affirm that the celebration and fostering of cultural diversity is an essential necessity for the achievement of Health for All. The diversity of the different cultures, communities and ecosystems, translates into interaction and co-evolution with nature. The knowledge and values embedded in this diversity have important learnings for all of us.

Traditional knowledge systems of which Traditional healing and health systems are a part, are organic expression of the cultural diversity and of the land, forests, language and life of communities. Traditional knowledge has evolved in specific contexts and needs to be appreciated in the light of its own world view. Traditional knowledge includes both the codified and the un-codified systems of healing.

Indigenous and rural communities, particularly women have been the caretakers of the eco-systems from time immemorial. They are also the custodians of the immense knowledge and diverse forms of culture that has evolved over millennia of peaceful and sustainable co-evolution with nature.

Historically indigenous communities all over the world have been systematically destroyed by the designs of colonization. This has been accompanied by a process of devaluing their cultures and knowledge systems. This has led to the extinction of numerous cultures and knowledge systems,

and the near extinction of many others. The modern attempt at cultural and economic homogenization for the benefit of the global market has devastating effects on these cultures.

Similarly the dominance of Western bio-medicine and a science based on a Cartesian split between the mind and the matter, the industrial revolution and an attempt to control rather than co-evolve with nature, has meant that all other knowledge systems are considered as inferior or mere objects of curiosity and appropriation. This has led to erosion of knowledge and confidence of these systems and has also resulted in large scale unmet need for health care.

## **VISION**

We reiterate the vision set out in the People's Health Charter for, “Equity, ecologically-sustainable development and peace” and, “a world in which a healthy life for all is a reality; a world that respects, appreciates and celebrates all life and diversity; a world that enables the flowering of people's talents and abilities to enrich each other; a world in which people's voices guide the decisions that shape our lives.”

## **EARLIER STATEMENTS**

We acknowledge the following statements/declarations that reflect the continuing and historic efforts towards celebrating and preserving of diversity of healing systems:

- Convention on Bio-diversity
- The Alma Ata declaration
- The Chaibasa statement
- The Global People's Charter for Health
- The Cuenca Declaration of People's Health Movement

## **TRIPS AND OTHER INTERNATIONAL TRADE REGIMES**

We also express our concern at the harmful effects of the trade-led agreements that institutionalize unjust international trade regimes. The present trade regimes are inequitous and adversely affect biodiversity as well as traditional knowledge systems. The focus should be on developing strong national level laws to protect biodiversity as well as rural livelihoods. All clauses in the various regimes that encourage the extraction of natural resources, as well as bio-prospecting, where age old wisdom of communities is exploited commercially with no benefit to the local people need to be reviewed and rewritten to protect the interests of the poor and marginalized persons as opposed to those of the corporate industry.

## **AFFIRMATIONS**

The present scenario is characterized by the paradox of increased usage of non-allopathic<sup>1</sup> systems in developed countries and urban centers and continuing dependence of large proportions of indigenous and rural

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<sup>1</sup> Allopathic: western bio-medical system of medicine

communities in the developing world on these systems. At the same time, there is a systematic erosion of these Traditional Knowledge systems as characterized by the increasing age of the surviving practitioners and the neglect of these systems by the younger generations as well an erosion of the bio-diversity that sustains these systems. This is partly a historical process, a continuation of the destruction wrought by colonization and also a result of forcibly altering the relationships between traditional communities and nature, degradation of the natural environment and the domination of the laws of the market over the laws of nature.

We affirm that Traditional Healing systems are not mere therapeutic alternatives to western bio-medicine. They are a totally different paradigm of healing and cannot be constrained to the point of interaction between a person requiring health care and a healer. Traditional systems are ways of life and holistic systems for the promotion of health in addition to having curative components, and should be treated as such. Moreover Traditional systems are individual specific and holistic and reducing them to alternatives to western medical cures is completely missing their message and significance.

Evaluation of any system of healing needs to be done systematically. At the same time it needs to be sensitive and cognizant to the paradigm and cosmivision from which it evolved. Evaluation needs to be done keeping the ultimate goal of Health for All in mind. Evaluation needs to actively and respectfully involve both the healers, as well as people using the various systems, to take into account their perspectives and value systems.

The natural environment is crucial for the health of the human race as well as for the sustenance of traditional knowledge systems. It is absolutely essential that any further degradation of the natural environment be stopped forthwith. Another way of degradation of the environment is by the commodification of natural resources and their exploitation for profit. Here we express our concern against the concept of Intellectual Property Rights for natural resources and traditional knowledge linked to these, especially those aspects that lead to the exploitation of communities that depend on and have protected these resources. We also strongly support the protection of traditional users' rights in addition to protection of traditional knowledge. Along with this it is also important to protect the livelihoods and the knowledge of traditional practitioners of both the codified and un-codified systems.

We affirm that every decision taken that will impact on the people of the world should be guided by people in all aspects of decision making, implementation and evaluation.

Ultimately the health of the people anywhere in the world is an emergent state of a complex of interactions and can occur only in the context of equity, peace and ecologically sustainable development. However in today's day and age there are numerous processes that are increasing inequity and poverty leading to ill-health. Thus regardless of the therapeutic prowess of any single system of medicine it is essential to make a concerted effort to wipe out poverty and inequity. It is important not to loose sight of the broader social determinants of health.

## **TRADITIONAL SYSTEMS AND HEALTH FOR ALL**

All knowledge systems can contribute towards the achievement of Health for All. While resisting the tendency of any system to monopolize, we believe that every region/community must be free to develop its own system which is safe, accessible, equitable and efficacious, and does not effect the community's self-reliance and empowerment.

Every knowledge system of the world has a crucial contribution to make towards the achievement of Health for All, no one knowledge system has a monopoly. Any attempt at domination can only be detrimental to the health of the people at large, but especially to the people who are marginalized by the present market dominated development model and continue to depend on these systems for their health in increasingly vitiated environments.

The contribution of the Traditional systems to Health for All should not be conceptualized only from the perspective of a therapeutic alternative, or their healers merely as human resources to universalize western bio-medical interventions focused on disease.

It is their holistic conceptualization of health and healing, with the emphasis on harmony and the conceptualization of health as a dynamic balance, their respect for the environment and for fellow humans and their respect of the laws of nature rather than the laws of the market that make these systems important for the achievement of Health for All.

## **CALL FOR ACTION**

- *This is being done for the following levels: Global, Regional and Local.*
- *Under each it was suggested that we have two sections – one on what we want and one on specific actions that will bring these about.*

### **At Global Level**

What needs to be done?

- Initiation of dialogue to increase understanding between systems and initiate multi-disciplinary research.
- Initiation of processes to resist trade led agreements.
- Initiation of processes to initiate urgent efforts to protect and rejuvenate the environment.

How to do it?

- Formation of global level committee/study circle – initiators could be World Health Organisation (WHO) and the People's Health Movement (PHM).
- Involvement of this committee in the activities of various movements against the trade led agreements..
- Concerted efforts to garner the political will to protect and

rejuvenate the environment.

### **At Regional Level**

What needs to be done?

- Initiation of dialogue to increase understanding between systems and initiate multi-disciplinary research.
- Efforts to standardise and exchange resources and technologies within countries of the region.

How to do it?

- Formation of a regional committee such as a SAARC level committee – the participants of this conference can be a nucleus to initiate the dialogue
- This committee can initiate dialogues with various government institutions/ministries to facilitate such resource/technology sharing.
- Exploring processes such as regional licensing, exchange of faculty, common curricula and evolution of continuing education curricula to build capacity at the regional level.

### **At Local Level**

What needs to be done?

- Protection of bio-diversity.
- Strengthening livelihoods of traditional practitioners.
- Documentation of bio-diversity.
- Revitalization of local health traditions.

How to do it?

- Formation of national level committees – including the participants and large civil society networks like the PHM.
- Initiation of micro-projects as learning and operational research.
- Conferences/workshops to disseminate various ideas / solutions.

#### **A PEOPLE-CENTRED HEALTH SECTOR**

“This Charter calls for the provision of universal and comprehensive primary health care, irrespective of people’s ability to pay. Health services must be democratic and accountable with sufficient resources to achieve this. ....

This Charter calls on people of the world to:

.....Support, recognize and promote traditional and holistic healing systems and practitioners and their integration into Primary Health Care ....”.

*People’s Charter for Health, 2000*

## **CONFERENCE REPORT - INAUGURAL SESSION**

### **E. PUPULIN**

Dr. Pupulin welcomed all those gathered on behalf of AIFO/Italy and asked Dr Sunil Deepak to chair the inaugural session.

### **S. DEEPAK**

Dr Deepak as the promoter of the meeting on behalf of AIFO/Italy provided background about the conference explaining that the initiative was promoted first by an Italian non-Governmental organization called COE and has been co-funded by Italian Foreign Ministry. He explained that this conference was first in a series of international meetings and the other meetings will be held in Far East and Pacific, Americas and African regions. He thanked friends and colleagues from People's Health Movement in India, without whom it would not have been possible to organize this meeting. He also thanked the staff of the AIFO office in Bangalore, who looked after all the practical details for the organization of this meeting.

### **H. SUDARSHAN**

Dr. Sudershan representing the people of the State of Karnataka (India) observed that it is a reality that the traditional systems of medicine are being neglected. He pointed out that when referring to traditional systems we need to include both the codified as well as the non-codified systems like tribal medicine, local medicine, folk medicine etc.

Coming to the more formal healing systems like Ayurveda and Unani and Siddha, he mentioned that in the state of Karnataka in India, there were nearly 36 colleges teaching these various systems, however there were still not enough doctors to run the Primary Health Centers, allopathic doctors were also not available. He mentioned that experience in the field shows that the Indian systems of healing were being managed very badly, and that most doctors were practicing allopathic medicine. While the government has been talking about integration, the way it has been translated into action is the mere dumping of boxes of ayurvedic and unani medicines at primary health care centres without proper training of the staff.

He talked about mainstreaming the traditional Indian systems into Primary Health care by using various strategies like the popularising of herbal gardens through the training of women's self-help groups. He felt the systems needed better management with the evolution of standard treatment guidelines and essential drug lists.

He also stressed that these traditional systems needed to be demystified (especially the more institutionalized ones) and become more accessible to the people. Traditional systems need to be community-owned, community-based and community-oriented to fulfill their potential role in achieving Health for All.

### **ANU DHINDAW**

Ms. Dhindaw welcomed the participants on behalf of the Local Technical Unit (UTL) of the Italian Embassy in India. She highlighted the work of the Italian Development Cooperation. She mentioned that the Cooperation had funded numerous programs on traditional medicines all over the world, including in Cuba, Latin America and in a few countries of Asia. She mentioned that details of the various projects were available on the website [www.idssonline.org](http://www.idssonline.org). She looked forward to a very productive and useful workshop.

### **MARIA PIA MACCHI**

Ms. Maria Pia Macchi welcomed the participants on behalf of Centre for Educational Orientation (COE/Italy). She felt that Traditional systems could play a very important role in overall development. She called for the participants to organize and network at different levels to create awareness about the traditional systems of medicine. She also highlighted the importance of documenting the efficacy and safety of the various traditional medicinal practices. She mentioned that given the rapidly changing context of the present day world, revitalizing the promise and the hope for Health for All required concerted efforts. She felt it was important for the various traditional systems to help people get back Health in their own hands. It was also important for the systems to interact with and help the scientists to understand people's knowledge. She said that popularizing and revitalizing traditional systems was an important key to realizing the goal of Right to Health.

### **M. V. JOSE**

Mr. Jose welcomed everybody on behalf of the Bangalore office of AIFO/Italy. He also mentioned some logistical details for the benefit of all the participants.



**Inauguration ceremony**

## **K. BALASUBRAMANIAM - KEY NOTE ADDRESS**

### **Role of Traditional Medicine in promoting well being of communities in South Asia – an introduction to the conference**



Dr. Balasubramaniam started by referring to a situational analysis of the practice of traditional systems of medicine in the present day context. He identified two main problems, which were:

- The need to carry out research to evaluate safety and efficacy of different traditional medicine therapies.
- Action plans to preserve and safeguard the bio-diversity,

sustainability and vitality of traditional medicine.

Regarding the evaluation of traditional medicines he mentioned that the WHO has called on clinical researchers to conduct clinical evaluation of traditional medicines within the specific framework of rigorous clinical pharmacological principles without ignoring or trampling on the concepts of the traditional systems of medicine.

Traditional systems of medicine are a summation of thousands of years of human experience in the selection of plants for preventive and curative health care. Practitioners of traditional systems argue that the efficacy of herbal remedies is due to the synergistic activity among the several ingredients of herbal mixtures. Thus by adopting the paradigm of active principles in isolation, the modern clinical pharmacologists, take the knowledge from the plants, but throws away the wisdom of centuries. He posed a crucial question – Is it possible for research scientists to examine other methodologies, for example, using experiential methods or alternatively an inductive approach, to evaluate traditional herbal remedies? He further called for the development of appropriate methods for clinical evaluation of traditional herbal medicines; methods and criteria not to be limited to the methods and concepts of modern biomedical science.

Regarding the preservation and safeguarding of biodiversity, sustainability and traditional knowledge he mentioned that we need to examine intellectual property rights and the TRIPS agreement carefully especially since they had potential adverse effects on biodiversity and traditional knowledge systems.

The basic premise of intellectual property is that an invention is a process or a product which is new, useful and capable of manufacture. However with regard to

herbal medicines, neither the product nor the processes involved are new. Therefore herbal medicines in use cannot be patented. However, TRIPS violates these principles - TRIPS does not ask from where the patent applicant obtained his/her knowledge; TRIPS allows countries to allow patenting of micro-organisms and microbiological processes. Together with the loose interpretation of the term “inventiveness” in national patent offices, TRIPS allows the patenting of traditional knowledge and genetic resources and a form of bio-piracy. Uncontrolled and unregulated commercial collection of genetic resources and harvesting and processing of medicinal plants have led to the near extinction of some very valuable medicinal plants. Protecting traditional knowledge, conservation of biodiversity, genetic resources and medicinal plants has therefore, become a global emergency.

## **SITUATION OF TRADITIONAL MEDICINE IN SOUTH ASIA**

### **DORJI WANGCHUK, NATIONAL INSTITUTE OF TRADITIONAL MEDICINE, BHUTAN**

Dr. Wangchuk mentioned that the traditional form of medicine practiced in Bhutan was called “*gSo-ba rig-pa*” and it was essentially the Tibetan form of medicine. This system had a holistic approach based on Buddhism, where health and spirituality were essentially inseparable. Among the core concepts of this system of medicine is that of “*margipa*” which essentially translates to ignorance. Ignorance is considered the cause of all suffering and disease. This ignorance causes the production of 3 poisons – desire, hatred and delusion – which in turn cause the secretion of the bile, phlegm and wind, and it is the imbalance of these elements that cause disease.



Dr. Wangchuk then went over the history of traditional medicine in Bhutan starting with its early history, its recognition in 1967 by the Government of Bhutan, up to the formation of the National Institute of Traditional Medicine (NITM) in 1998. He then described the structure of the Government department of Health and explained the national policy on traditional medicine and the roles and responsibilities envisaged. He then went over the budget of the Ministry and department. He also presented data which showed the increasing number of patients accessing the various forms of traditional therapy, reflecting the increasing confidence people had in the traditional systems.

He then talked about the training of the various levels of health professionals and the indigenous production of the various formulations of medicines. He also went over the research priorities set for the traditional systems including establishing the safety, efficacy, quality and stability of the various drugs, validation of various pre-processing processes, documentation of various therapies and the management of adverse reactions.

In terms of future directions, Dr. Wangchuk mentioned that there were plans to introduce a masters program in Traditional Medicine, establishment of traditional

medicine units in all Basic Health Units, patent protection of various medicines and increase export of traditional medicines to other countries.

**DR. RISHI RAM KOIRALA, NATIONAL ASSOCIATION OF AYURVEDA, NEPAL**

Dr. Koirala mentioned that in Nepal nearly 3500 plants were used as part of the traditional healing systems. He mentioned that many of the ancient text-books that were not found in India were present in Nepal. He described the trained ayurvedic human resources in Nepal at different levels, from professional to the certificate level, and the institutions involved in the research and administration of the traditional system.



He mentioned that there was a need to recognize both the codified as well as the non-codified systems of traditional medicine. He also called for the need to systematise the knowledge of the people – if not, it was going to be lost, as the present generation was not actively following the traditional systems. He also mentioned the need to seriously think of how to transfer the insights of local knowledge into the educational system. Similarly the need to research various traditional technologies in the educational institutions. He then mentioned the main challenges to the development of traditional systems - this included development of professional ethics and quality standards, National documentation including IPR and TRIPS policy to safe guard the traditional systems as well as the natural resources necessary for them. There was also a need to develop institutional capacity and performance, and the further development of research. He also called for a SAARC level networking and planning to synchronize the education on traditional systems in all the SAARC countries, and for establishing channels for sharing various learnings and experiences regarding traditional medicine.

**DARSHAN SHANKAR, FOUNDATION FOR RIVITALISATION OF LOCAL HEALTH TRADITIONS & CONSULTANT AYUSH, INDIA**

Dr. Darshan mentioned that India had probably one of the most advanced National Programmes for the promotion of traditional systems of medicine. He said that in India there was probably the largest infrastructure with regards to education, research and industry in the traditional medicine sector. Moreover a basic regulatory framework to govern the safety, efficacy and quality of various traditional products was already in place. However despite these impressive achievements there were critical gaps.



Among the main challenges he mentioned were, sub-critical investment in education and the urgent need for educational reform. While the private sector in AYUSH has grown, there is insufficient data on the impact of AYUSH on the

communities' health, as well as the lack of involvement in public health. While AYUSH has been introduced in various regions of India, it seems most accessed in the Southern states of Tamil Nadu and Kerala and the northern state of Himachal. He mentioned about 6200 plants, 400 animals and about 70 metals that were being used in the traditional systems. He mentioned the urgent need for trans-disciplinary research and gave the example of a metal in the Siddha system which is supposed to be collected at a specific time and place – the varying qualities of the metal under these and other conditions were confirmed by a geochemist – this only highlighted the need for such trans-disciplinary research.

He mentioned that the traditional systems had a symbiotic relationship with local traditions. He also talked about the move towards medical pluralism. In this connection he mentioned that it was ridiculous to expect the traditional systems to be validated by the scientific framework. There was instead a need for evolving new disciplines to look at these innovatively and holistically. Trans-disciplinary research is largely for communication and not for validation. There was a need to combine both the reductionist and the holistic ways of researching.

#### **FARIDA AKHTER, POLICY RESEARCH FOR DEVELOPMENT ALTERNATIVE, BANGLADESH**

Ms. Akhter started her talk with a critique of the modern system of medicine – focusing on the fact that it was not reaching the people who needed it the most. She specifically mentioned that one of the problems with modern medicine has been the way it has ridiculed the traditional systems.



She mentioned that folk traditions that were mainly based on community knowledge, were also based on local resources and were widely practiced in Bangladesh. She mentioned that these systems were getting degraded not necessarily only because people do not know about the system but also because of wrong agriculture practices, deforestation and environmental degradation. She mentioned how there were people coming into villages in Bangladesh and were taking away truck loads of these local resources. This was a classic example of bio-prospecting that is going on all over the world and is leading to the decimation of the natural resources and livelihoods.

She highlighted how the traditional systems were not only systems using these resources, but also had inherent systems to conserve these natural resources. She said that these traditional plants and the bio-diversity can be maintained only by fostering traditional community practices and their practitioners. She highlighted the role of women in communities and that in any discussion on preservation we must not forget the people who use these traditions and the adverse circumstances they are subject to.

#### **DR. R. S. JAYAWARDENA, NATIONAL INSTITUTE OF INDIGENOUS MEDICINE, SRI LANKA**

Dr. Jayawardena started with a historical overview of the development of

traditional medicine systems in Sri Lanka. He talked about the ancient links with India and the influence of Buddhism, in shaping the traditional medicine system in Sri Lanka. He mentioned the various indigenous practices including the occult practices that were a part of their repertoire. He then described the structure and the functioning of the National Institute of Indigenous Medicine, and details of the Ayurvedic hospitals in the country. However he mentioned that the main interest in the traditional systems was coming from west and in terms of tourist attraction. Moreover the field of beauty care and massages using traditional systems was more popular in Sri Lanka.



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## ROUND TABLE 1: ROLE OF TRADITIONAL MEDICINE IN PROMOTING WELL BEING – VIEWS FROM THE GRASS ROOTS

MODERATOR: FARIDA AKHTER



**SMITA BAJPAI, CHETNA, INDIA**

Vd. Bajpai, started HER presentation with an overview of her organization CHETNA's vision of using traditional medicine as an approach to empowerment of women. She mentioned that through their experience in the field, they had come up with 5 different models for promoting empowerment of women through traditional medicine. These models represented different approaches to the promotion of traditional systems and empowerment. These models were as follows:

1. **Model I:** This includes the understanding of local traditions through the basic principles of Ayurveda and classifying them into sound, distorted and harmful. The grey areas were areas for research. These practices could then be mainstreamed and duly modified as necessary.
2. **Model II:** This includes steps to identify and prioritize health issues which are neglected, collect local knowledge from multiple stake-holders, review literature with regard to these practices, building capacities of local communities and documenting and disseminating the evidence.
3. **Model III:** This starts with the identification of local plants for primary health concerns, review of literature for validation and prioritization of plants for promotion; raising awareness of multiple stake holders; documentation and mainstreaming into public health.
4. **Model IV:** This starts like in Model II with the identification of a common concern and then there is a collection of local views and measure. The next step is a cycle of – validation, awareness raising, cultivation, production and

consumption. The final step is documentation and advocacy at other levels.

5. **Model V:** This model starts with the identification of a specialized traditional skill. The next steps are the organization of practitioners, the development of standards of practice, capacity building of practitioners, and advocacy for their recognition in the public health system.

She then shared the experience of the Dai's<sup>2</sup> association which is a pioneering effort in Gujarat, involving nearly 5000 dais from 18 districts. She then posed some crucial questions:

1. What is the interface between a plural health system and healing?
2. What is the interface between the rights based approach and the empowerment/self-reliance approach?
3. Is standardisation really necessary? What are the other issues pertaining to standardisation and regulation?
4. When we are doing research – what are the indicators that need to be monitored from the AYUSH point of view?
5. What are the steps for policy advocacy for recognition of traditional healers and dais at various levels?
6. How does one mainstream this learning within the public health system?
7. How does one reach out of the particular system and build up a critical mass of people working for health?

She ended with the following recommendations:

- To form a national/regional task force on indigenous health and healing therapies.
- To include practitioners from different systems, policy makers, researchers and NGOs.
- To work towards an appropriate strategy for programme, policy and media advocacy.

### **SARITA SHRESHTA, DEVI MA KUNJA, NEPAL**

Dr. Shreshta described the functioning of the Devi Ma Kunja hospital which was located in an extremely under-served area in Nepal. This was an Ayurvedic hospital and was part of an effort to reach the unreached and facilitate the journey towards Health for All.

At the outset she mentioned that women in the rural areas are so busy with the struggle of survival that often they can not come to health services. The health system has to go to them. This was the logic of organising medical camps in communities. She also mentioned that while the state was not supportive of the development of such initiatives, the people supported and used the infrastructure and continue to use it.

One new angle to the discussion that she highlighted was the potential role of Ayurveda in a context of increasing drug resistance.

In a slightly different vein she mentioned how the philanthropy-based approach of many NGOs creates dependence and expectations – people are always expecting

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<sup>2</sup> Dai: Traditional birth attendants

to receive something from groups who come to work with them.

## **DEEPA CHANDRAN, KSSP, INDIA**

Dr. Deepa made a presentation on the Analysis of the Causes of Decline of the Folk Healing Traditions in Kerala state in India. She pointed out that the erosion of the folk healing traditions in an area meant that sections of society still dependent on it (usually the poor and marginalized) will become more vulnerable. This sort of erosion will also affect the biodiversity. She highlighted the factors in ancient Kerala that affected social acceptability of various systems of medicine, and factors in the modern age that led to the present state of near extinction of many ancient systems.

She highlighted mainly the sociological causes of the decline. In this, two crucial factors were the rise of Sanskrit as a language of the elite and the victimization and secondary stature of women (who were the main traditional practitioners). Other significant factors included the change in the educational system (especially the erosion of the *gurukula* system) and thus the loss of an organic link with the community. However despite this decline, folk traditions survive given their organic link with our lives, and their continuous renewal based on practical experience.

However there remained issues with respect to the retrieval of ancient knowledge about folk traditions, their transfer and the training of future practitioners. She said that we must see folk traditions as the result of centuries of assimilated knowledge and interaction, which are the intellectual property of the community concerned. She ended with a call to put our sincere efforts into the preservation of these traditions, especially by making life style changes, and defending these systems from the present day neo-colonial onslaught.

## **DISCUSSIONS**

During the discussion that followed these presentations, the following points came up prominently.

- While there was a lot of discussion on the harmful practices or the useful practices and their mainstreaming, there is also a need to discuss the local practitioners, and plan about efforts to mainstream these practitioners too.
- While we talk about Ayurveda and herbal medicine and their revitalization and promotion, we have to realize that these will be empty ideas if there are no herbs highlighting the crucial nature of biodiversity. Moreover it was highlighted that it is only the poor of a community who can and do conserve biodiversity.
- One person raised the question that while we were interested primarily in traditional systems, we cannot neglect the issues surrounding biodiversity, given the intimate links between the traditional systems and biodiversity. We certainly need to ask the question - Why is the biodiversity disappearing? And we also need to assess, what we as those concerned about the Traditional systems, are doing about it?
- While there have been recurrent calls to let the traditional systems evolve and adapt to the changing contexts, it was cautioned that replacing basic values may be harmful.

- With regards to issues surrounding the role of the Dais in today's public health practice where the demand is for a Skilled Birth Attendant, one of the participants suggested that we need to redefine the concept of the "skilled birth attendant" with special reference to the traditional healing practices – rather than fight institutionalization for which there seems to be increasing evidence as well as growing demand.

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## **ROUND TABLE 2: PROMOTING NETWORKING ACROSS DIFFERENT DOMAINS OF TRADITIONAL MEDICINE IN SOUTH EAST ASIA – ACHIEVEMENTS AND CHALLENGES**

**MODERATOR: RISHI RAM KOIRALA**



In his brief introduction during the roundtable – Dr. Koirala opined that the different countries in the world did not seem to have achieved the goal of Health for All as laid out in the Alma-Ata declaration of WHO. He suggested that this conference give specific recommendations regarding this, especially in terms of the traditional systems.

### **TULEY DE SILVA, SRI LANKA**

At the outset Dr. de Silva mentioned that he had attended numerous such meetings and that there were numerous booklets of proceedings produced, however there was no follow up. He cautioned the participants that this should not be the case for this conference too.

He felt that in today's situation both the NGOs and the Governments should work together, any clashes will only be counter-productive. He was of the opinion that the best way to influence the Governments was through evidence. He gave the example of the increasing acceptability of acupuncture to highlight his point.

He said that though the different systems had different drugs, the commonalities were the holistic approach to the person who was sick, as well as the holistic use of the medicine rather than focus on a particular active principle etc. This holistic approach to both the patient as well as the medicine, was the reason for the survival of traditional systems. In the modern system, he said, there were a large number of side effects and there was no sufficient emphasis on the quality of life –

this has led to increasing disillusionment with modern medicine and an increasing reversion to traditional medicine.

However he also pointed out that however good the system may be, the efficacy ultimately depended on the quality of the medicine, thus especially for traditional systems the challenge is the standardised dose product.

He suggested a series of strategies to strengthen the acceptance of traditional systems and their further development/evolution. These include:

- Regular meetings for sharing both the successes and the failures of such initiatives – this can be at multiple levels, but especially at the regional level.
- He also suggested a networking of the various research institutions that are doing research in traditional systems. This is not only to share but to avoid duplication and thus use the scarce resources optimally.
- He then suggested the networking of production, and the harmonising of standards both nationally and regionally.
- He also suggested a networking of NGOs working in the same field.
- Another suggestion was a networking of laboratories that do certain specialized tests. Thus researchers can get access to these tests, even though their laboratories do not have the required equipment.
- He supported the demand of setting up a regional forum for ayurvedic practitioners. He mentioned that a strong association could play an important role in excluding fake doctors.

He left the audience with a question that was one of the key issues with traditional systems – How do you formalize the non-formal yet not losing out on their vitality and organic links with their community?

### **DORJI WANGCHUK, NITM BHUTAN**

Dr. Wangchuk called for uniformity in the curriculum in schools of traditional medicine systems in different countries. This will enable exchange of faculty members as a step towards developing local capacity. He also called for the development of curriculum for continuing medical education for traditional system practitioners.

There was an urgent need for the development of various approaches to quality maintenance of traditional medicines. Some suggestions included the development of formularies, strong regulations that could be shared among the different countries. It was also important to undertake detailed documentation of the various practices. Further there was the need for conservation, sustainable production, research and development. He highlighted that one of the possible initiatives that can be used in SAARC region is the “Bay of Bengal Initiative on Multi-sectoral and Technical Cooperation.

### **DISCUSSIONS:**

- One of the participants raised the issue that though there was an explosion of knowledge on various traditional systems especially on the web, the students

of traditional medicine are usually not exposed to the Information Technology. Thus they are not in a position to use this technology to access the information.

- With regards to the further development of traditional systems – one of the participants said that the most important step was to create a demand. Once there was a demand for traditional systems, they will be automatically be revitalized.
- With regards to the evaluation of the various systems – it was felt that we need to know our limitations, and it is more important to show that it works rather than how it works.
- There was a suggestion regarding regional licensing as a way to increase sharing as well as capacity building.
- There was a clear sentiment – that there should be no 'integration' – each system had very different paradigmatic dimensions and integration would be a very artificial process. There however could certainly be integration in space, in the sense that different systems can work out of the same building and there could be cross referring, but not in function, in terms of a single system incorporating different aspects of the different systems.
- The participants from India indicated that the 11th National Five Year Plan was a great opportunity for many of these concerns to be addressed and these ideas to become policy.
- One of the reasons for the erosion of the dai system was the increasing medicalization and commercialization of childbirth. Thus it is not enough to work with the dais alone. In general this meant that one needed to address the larger contextual issues in addition to working with traditional practitioners.

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## **ROUND TABLE 3: BIODIVERSITY AND SUSTAINABILITY ISSUES IN COMMUNITIES**

**MODERATOR: MIRA SHIVA**



Dr. Mira Shiva introduced the theme of the round-table discussion by raising attention to the context within which we need to discuss sustainability and biodiversity issues. She said that the present day and age was characterized by competitive, corporate led and unjust globalization, in which profits are considered more important than people. It was these that we need to address if we want to revitalize traditional systems and enable them to play their role in helping communities reach the goal of Health for All.

### **NARAYAN KAJI, WATCH, NEPAL**

Dr. Narayan Kaji started his presentation with a description of the immense biodiversity of Nepal. He presented information on the different bio-climatic zones, different ecological zones, the number of species found and the area under forest cover. He mentioned that the local people living in these different areas were dependent on these natural resources.

Recently however, there has been a tremendous increase in the demand for these resources leading to indiscriminate collection without any system of control or rejuvenation. He gave the example of how some schools actually close down so that the children can go and collect these products. This is coupled with an erosion of local knowledge.

This increase in demand for natural resources has occurred due to two main reasons. First is that given the remoteness of the mountain areas and the underdevelopment, there is a large scale migration. Thus people with knowledge cannot pass it on to anyone. He mentioned how that with the advent of the Ministry of Forests, the old systems of community-led protection were destroyed,

but there was no new system to preserve the biodiversity in place. Moreover acute poverty also drives people to collect these resources indiscriminately. He also mentioned that the people now in charge had no knowledge about the forests, in contrast to the local people who had developed organic links. Another major reason pointed out was that of the corruption that is rampant in the system, to which most authorities turn a blind eye. In fact in some areas local people have taken up patrolling and keep out the forest officials, while letting local people who collect forest produce in.

He then described two case studies highlighting the approach of involving the local people in the collection of and production from the natural resources. These case studies included one in the Humla area and another with the nomadic Chepangs community.

Based on these experiences Mr. Kaji suggested that the Ministry should transform itself mainly to technical support, while the protection and development of the forest area should be handed over to the local gatherers, to be handled using traditional systems. Moreover he also suggested the formation of user groups, control of grazing by the local community and encouraging processing of products or at least half processing by the local cooperatives themselves, at the community level.

#### **MIRA SHIVA, PHM, INDIA**

Dr. Mira Shiva started with the point that the contribution of the ecosystem to our health is not only through the availability of medicinal plants. In fact the ecosystem as a whole has a much wider contribution towards the sustenance of life (ecological services). Therefore the question of biodiversity vis-a-vis traditional systems should not be limited only to the question of medicinal plants.

She underlined that Convention on Biodiversity is more appropriate to handle the issue of Traditional Knowledge rather than the pro-corporate Trade Related intellectual property Rights (TRIPs). Article 27.3.b of TRIPs, which deals with patenting of life, is still under review & no final decision has been taken, while many national laws on this subject are being made.

The stand of public interest Health groups is that there should be NO PATENT ON LIFE.

Patenting of Traditional Knowledge includes patenting of seeds, genes & properties of medicinal plants. One example of how the present patent system is stealing Traditional Knowledge is Phyllanthus Niruri (known as Bui Amla in the north India, Kelia Nelli in the South, and used all over India for treating jaundice), that was patented for hepato-regenerative properties. Similarly, Bitter Gourd (Karela), and Jamun have been patented for their anti Diabetic properties.

#### **ROKEYA BEGUM, UBINIG, BANGLADESH**

Ms. Begum's presentation highlighted the way in which biodiversity is being threatened by the green revolution and the move towards cash crops, monoculture, hybrids, pesticide and fertilizers intensive agricultural practices.

She gave examples of how increasing deforestation leads to an erosion of livelihoods. She then described the *Nayakrishi Andolan*<sup>3</sup> which is active in nearly 500 villages spread over 17 districts of Bangladesh. As part of this initiative the community is encouraged to use practices that foster biodiversity rather than destroy it. This includes the preservation of cultural practices as well as processes like Agro-forestry etc.

She also described the work of the *dais*, who not only help women deliver but also take care of health of cattle and other livestock. These women not only look after pregnancies and deliveries but also play an important role in the maintenance of biodiversity and the regeneration of endangered plants.

## DISCUSSIONS

- While explaining how tobacco farming led to loss of biodiversity and other problems, it was pointed out that the main problem was the cutting of trees and destruction of other plants for the development of monoculture plantations. However these practices also led to numerous other unintended and sometimes, un-documented effects such as the reduction of availability of wood for fuel, leading to great hardships especially for women.
- There was also great concern raised about the introduction of genetically modified crops. It was felt that the introduction of GM crops would adversely impact biodiversity.
- The major problem for the local communities is that not only is there a systematic destruction of the local ecosystems but also of local production capacity. The control of collection and production is taken over by outside people who do not have organic links to the local communities. This leads ultimately to more exploitation.
- One of the suggestions that came out of the discussion was that, strategically we should avoid getting embroiled into the TRIPS agreement, but rather focus on lobbying for strong national laws within the much broader and more comprehensive Convention on Biodiversity.
- It was pointed out that when we get into discussions and come up with suggestions it is important to remember who we are representing. It was stressed that we were all agreed upon the fact that we were representing the over 400 million poor, who had no voice.
- It was pointed out that all traditional knowledge systems had a great in-built respect for biodiversity. For example, in the Ayurvedic system, physicians pray to the medicines and ask for forgiveness for using them – but justifying that they are being used only for the good of humanity. Similarly the American Indians talk to the plants and only pluck plants after talking to them.
- It was pointed out that with the increase in the use of pesticides, some plants considered as weeds that grow only with particular crops like paddy<sup>4</sup>, are destroyed by the pesticides and these are lost from the

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<sup>3</sup> Nayakrishi Andolan: literally “campaign for new agriculture”

<sup>4</sup> Paddy: Rice

repertoire of local remedies.

- Some of the suggestions and possible future direction of research and development for the revitalization of biodiversity include “buy back models”, and growth of plants in tissue culture.
- It was pointed out that we need to ask the question - are we doing this conservation for profit and the market or for public health and public welfare?
- Highlighting the inadequacies of the agricultural policies followed in the sub-continent – the question was asked – what had made nearly 1.5 lakh<sup>5</sup> farmers in independent India to commit suicide? Whatever are the policies that are behind this, need to be challenged, as they clearly affect the opportunity for Health of All.
- We need to understand that for the urbanized middle class or elite consumer the marginalized and the poor who are being exploited in the process of satisfying their consumption needs may not be a priority.

***Support to Alternative Systems***

“Develop national policies on traditional and alternative medical systems and include them in national health programmes....”;

***The Mumbai Declaration, People’s Health Movement, 2004***

...Useful aspects of traditional medicine and culture must be valued and included as part of a people-oriented society and health systems...”.

***The Cuenca Declaration, People’s Health Movement, 2005***

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<sup>5</sup> Lakh: One hundred thousand

## **ROUND TABLE 4: CONDUCTING RESEARCH ON SAFETY AND EFFICACY OF DIFFERENT TRADITIONAL MEDICINE THERAPIES**

**MODERATER: TULEY DE SILVA**



Prof. de Silva introduced the round table discussion by pointing out that we must ultimately use all the systems available to us, we cannot expect to be using only a particular traditional system or systems. No one system can do everything. We need to find a middle ground and each individual needs to make his/her choice. Presently the so called 'choice' in societies that have a plural health care system is due to the situation of poverty and marginalization rather than any true freedom of choice. This is due to the fact that there is a great financial implication of the choice of systems when one is ill. We need to clarify what the role of traditional systems are? Especially its role for people who are deprived of access to other, especially modern systems of healing. What is the role in the third world, and what is its role in the developed world? He noted that the traditional systems are increasing the quality of life. He also felt that some systematization of knowledge is inevitable and even necessary for advancement. But the crucial question is research on what?

### **TANAZ BIRDI, FOUNDATION FOR MEDICAL RESEARCH, INDIA**

Dr. Birdi described a project that attempted to forge close links between a community level initiative to revitalize and promote locally popular herbal remedies and molecular level research and documentation about the plants in a modern laboratory.

She explained that the choice of disease for research on plants is also an issue. While the drug industry concentrates on drugs for chronic diseases, for the rural communities, drugs for common infectious conditions are still a priority.

At the beginning of this project their team defined standardization as a correlation of efficacy with phyto-chemical profile of the plants. Another crucial point she made was that in our focus on vegetative yield, sometimes we can neglect biological activity, assuming that this is always the same. With regard to the choice of plants to study she cautioned that scientific research on most plants is hard to come by, and in fact the plants may have evolved/changed quite significantly since the time of description in the ancient texts.

She mentioned that the most acceptable plants for kitchen gardens were those with multiple uses, rather than ones with only one use. She said that we need to be aware that herbal products sometimes act on symptoms rather than on particular agents, and sometimes different constituents of a plant act at different stages or on different organisms. She also mentioned that the initial accurate botanical characterization was very crucial as there was a large variation in biological activity between different varieties of the same plant.

Talking about the limitation of pre-clinical testing she said that a narrow approach of correlating antimicrobial activity with clinical efficacy may not be appropriate. Moreover most of the common immunological tests may not cover the range of actions or the relevant actions of these plants, and the tests cannot pick up the action of active principles that are break down products of the original plant substance.

She then talked about standardization as a process aimed at increasing efficacy, decreasing toxicity and reducing variation. She also highlighted the differences of approaching a crude extract versus trying and characterizing an active principle.

She then gave the example of the work with Guava plant for diarrhea, where research showed that guava acted through multiple pathways. Moreover she also highlighted that certain strengths were more efficacious than others. Similarly she reported that depending on the availability of water during growth, or the season when planted/harvested the same plant showed different phyto-chemical as well as biological activity. This clearly showed the importance of going beyond the active principle to the overall efficacy of the crude extract in trying to understand the activity and then work towards relevant mechanisms for standardization or pre-clinical testing. In addition it also was evidence for the age old observation that the soil, the conditions of growth as well as the time of cultivation as well as harvesting were crucial for biological activity.

**SHANKARAN NAMBOODRI, GONOSHASTHYA KENDRA,  
BANGLADESH**

Dr. Namboodri made a presentation on the safety and efficacy of traditional medicine from the perspective of an ayurvedic physician involved in daily clinical practice.

He mentioned that many of the effects described in the text books were not seen in clinical practice, similarly many of the effects that are seen (even if anecdotal) in clinical practice are not mentioned in the text books. Moreover he was concerned that for the further development of any system of medicine there was a crucial need for systematic documentation and feed back at the practice level. This data

should be studied closely to generate proof of efficacy. He felt that given their classification as dietary supplements much of the rigor necessary for their testing was bypassed.

#### **TEMPA GYELTSHEN, NITM, BHUTAN**

Drungtsho Tempa talked about the present thinking in Bhutan on the establishment of safety and efficacy of the various traditional medical practices used by the people. At the outset he mentioned that nearly 40% of visits to the medical center were treated with traditional practices. He also mentioned that there were quite a range of practices and some of them like acupuncture and blood letting etc. were invasive procedures. He mentioned that in 1999 the National Conference on Traditional Medicine called for standardization as well as the incorporation of asepsis into the practice of traditional medicine. He mentioned that while Bhutanese folklore was replete with mentions about these various techniques or practices, that in itself was not an assurance of safety and efficacy. He then went through some of the common practices and what guidelines have been evolved for their safety.

He also mentioned that the National Institute has recognized the need for thorough research on the safety and efficacy of the various techniques of traditional medicine. He said it was important for the standardization of various methods and the development of methodological guidelines for each. He also mentioned the importance of coming up with standard indications for the use of different therapies, and the facilitation of national level networks of various traditional medicine practitioners to standardize practice. He also called for the cooperation between the allopathic and the traditional physicians, and the conduct of nationwide patient satisfaction surveys as guides to the further development of traditional medicine.

He concluded by saying that while it was important to have a strong evidence base on efficacy it was also important to take into consideration various factors like equilibrium between the body, mind and environment etc. when coming up with standardization parameters.

#### **RAVI NARAYAN, COMMUNITY HEALTH CELL, INDIA**

Dr. Ravi Narayan described the learnings from an initiative called RITAM. This was a multidisciplinary study on the use of various forms of traditional medicine in the treatment of malaria. Dr. Ravi mentioned that one of the most important and crucial first steps in any multi-disciplinary or multi-system study is a lengthy and detailed philosophical discussion. This was important to clarify each of the participants' stands as well as approaches as well as lay out a framework for further dialogue.

He mentioned that all herbs used for malaria were not parasiticidal, some may be immuno-modulators. He cautioned that in such a case the study design to study a parasiticidal activity or an immuno-modulatory activity would be very different.

He cautioned that even when we are talking about different systems, when it comes to evaluation we sometimes assume a single system or a dominant

paradigm of evaluation. However what we really need is to understand what the traditional practitioners are doing, why they are doing it and try and work out the logic and inherent rationale. Thus each system has to come into this dialogue as an equal partner.

Another challenge that the group faced was one of nomenclature. While in common parlance, malaria of the allopath was loosely translated into *vishama jwara* – strictly speaking it was not an accurate comparison. This was obviously a major limitation to the process. Another very important aspect of the discussion was the understanding of how one particular system is attempting to tackle the problem, how they explain the effect on the body and what is happening to the drug and the effects of the drug on the body. Moreover one need to understand how each system explains symptomatology.

He then came to the issue of standardization. Conceptually standardization may mean different things to different systems. The important question is of course, standardization for whom? He cautioned that while the industry was approaching standardization from the point of view of the extract or active principle we were discussing standardization from the point of view of supporting and revitalizing of local practices and empowerment of local communities.

In conclusion he pointed out that in doing such studies it was very important to ask the question – For whom we are doing the research? If we are not clear on this the research is likely to be misused. While field level practitioners were interested in dialogue, experience in the RITAM process showed that at the end of the day it was the respective medical councils that failed to support the process. Dialoging between systems is a difficult process, and there are not enough centers where people look at each other with trust and a spirit of sharing.

### **TULEY DE SILVA, SRI LANKA**

In his remarks Prof. de Silva opined that it was better to use clinical effectiveness rather than strict parameters characteristic of a clinical trial. As the paradigm of the traditional systems was not one of cause and effect, but rather of a multidimensional disease due to imbalances, the evaluation paradigm needs to reflect the same. He also added that most of the traditional systems used the healing power of nature and the body's innate ability to heal. He also pointed out the importance of differentiating between the cause of the disease and the relieving of the symptoms.

He pointed out that most discussions of the safety, quality and efficacy were only centered around drugs. What about the body-system level? What about at the practitioner level?

He mentioned that we need to have holistic efforts to measure complex effects.

If we put a drug through a clinical trial we are left at the end of the whole process with a 'western drug' which is very different from the medicine of the traditional practitioner. Clinical trials presently only focus on active principles whereas for traditional systems it is the crude extract that is important. Moreover the resources required to do these clinical trials are very large. We need to focus on

areas of research where presently the west has no answers, or where the traditional systems has a less toxic substitute to offer.

He also cautioned that the moment you attempt to introduce protocols for standardization, cost of the product goes up very much.

## **DISCUSSIONS**

- During the discussion it was pointed out that such 'chemical research' was very costly and in all probabilities not cost effective either. Emphasis needs to be given to such dimensions as the patient's desire to heal, the attributes of a healer, the confidence of the healer as well as the confidence in the healer.
- It was felt that we need systems/paradigms other than the presently dominant western medical paradigm to support the development and enable a deeper understanding of the traditional systems.
- While clinical trials have their own problems one of the most important is that of the definition of the outcomes to be measured. Does it have to be based on the allopathic or the ayurvedic or other traditional paradigm?
- Another point was that in most developing countries and especially in rural areas, where the traditional systems form the back bone of a healing system, there is hardly any opportunity to do research.
- The environmental degradation issue again came up, and the concern was that given the environmental degradation – How does one ensure the safety and the efficacy of the plants grown in such degraded/polluted environments?
- Classic studies such as Udupa's work on yoga and psychosomatic illnesses and the study on “bazar medicine” by the principal of the Agra Medical College in the 1940's were cited as pioneering works which need to be re looked at as well as followed up.

The discussion ended with an affirmation that what is scientific is what works, how it works is not so important.

### **A VISION OF HEALTH**

“Equity, ecologically-sustainable development and peace are at the heart of our vision of a better world – a world in which a healthy life for all is a reality; a world that respects, appreciates and celebrates all life and diversity; a world that enables the flowering of people’s talents and abilities to enrich each others; w world in which people’s voices guide the decisions that shape our lives.

There are more than enough resources to achieve this vision. ....

- People’s Charter for Health, 2000

## **ROUND TABLE 5: ROLE OF TRADITIONAL MEDICINE IN THE STRATEGY OF “HEALTH FOR ALL” - SHARING OF EXPERIENCES ON ACHIEVEMENTS AND CHALLENGES**

**MODERATOR: SHIRDI PRASAD TEKKUR**



### **RAVI NARAYAN, COMMUNITY HEALTH CELL, INDIA AND PEOPLE'S HEALTH MOVEMENT COORDINATION COMMITTEE**

Dr. Narayan spoke about the People's Health Movement. He started with the question – what was the need for a People's Health Movement? In reply he recalled that in 1978 at the Alma-Ata conference the WHO and the governments of the world pledged to attain Health for All by the year 2000. But in the year 2000 a large proportion of the world's population still lacked access to the basic determinants of health and health care. Experience showed that public health systems were deteriorating due to cuts in budgets, and systems were more inaccessible and unequally distributed. It was in response to this situation that people's groups from all over the world met in 2000, for the first ever People's Health Assembly in Savar near Dhaka in Bangladesh. It was at this assembly that the People's Health Movement (PHM) was born.

At the first People's Health Assembly, the Global People's Charter for Health was released. The Charter declares that “Health is social, economic and political issue and above all a fundamental human right”. It asserts that for Health for All, powerful interests need to be challenged, globalization needs to be opposed and political and economic priorities have to be drastically changed.

He said that the goals of the People's Health Movement were:

- To build and strengthen peoples organizations.
- Promote peoples involvement in decision making.

- Demand people's representation in international, national and local forums.
- Support participatory democracy in health and social development.

The People's Health Movement presently had country and issue based circles and focused on action on the social determinants of health. It was presently active/had representation in nearly 90 countries.

He then listed some of the important milestones and some of the important events that the People's Health Movement took part in.

He then shared some of the international recognition that the PHM had got in the mainstream literature on health. He ended with the quote that the PHM represented groundswell of peoples movements, that it is a reminder to international agencies, governments and academic institutions of forgotten promises and it represents an effort of globalization from below.

### **PRAVOSH DAS, DALIT BANGLADESH, BANGLADESH**

Mr. Provosh described the activities of the organization called Dalit Bangladesh. The group was using both ayurvedic as well as allopathic medicine based on materials easily found in the neighborhood for the health of the community. The project included a Primary Health Center and production of some basic medicines. This project also included such activities as training of a community health workers, promotion of traditional medicine gardens and traditional medicine promotional activities.

### **H. SUDARSHAN, VIVEKANANDA GIRIJANA KALYANA KENDRA & KARUNA TRUST, INDIA**

Dr. Sudarshan presented the experiences of Karuna Trust in both on-going documentation of traditional practices, as well as its recent initiatives of developing traditional system-based primary care.

Some of the traditional practices that have been documented in great detail among the tribal communities in the area and strategies for documentation over the years of working with tribal communities include: child-delivery in squatting position, various ethno-botanical studies, village level registers, training tribal girls as Auxiliary Nurse Midwives (ANMs), developing herbal gardens etc.

Dr. Sudarshan was also part of the Karnataka State Task Force on Health, which had made some specific recommendations on the development of traditional systems and their integration into the public health system.

In the project called “Mainstreaming traditional medicine in Primary Health Care” Karuna Trust is mainstreaming traditional systems in over 25 Primary Health Centers as well as 51 traditional medicine centers in Karnataka state. The objectives include the orientation of Ayurvedic students to community health issues, streamline procurement of traditional drugs and develop an essential drug list.

## **RAKHAL GAITONDE, COMMUNITY HEALTH CELL, INDIA**

In his presentation Dr. Gaitonde reflected on his experience of attempting to introduce traditional systems at various levels.

Some of the main observations were that there was a definite erosion of traditional systems, and a lack of confidence in this knowledge. He felt that people are acutely aware of efficacy of a drug. However in their mind – arithmetic efficacy is only one of many dimensions of the calculation. He also highlighted the 'indirect costs' involved in many of the traditional remedies, such as time to prepare, fuel costs to boil and make concoctions etc.

He ended by saying that the promotion of traditional systems cannot be done without taking into account the broader dimensions of health. Merely focusing on efficacy will not have the requisite results given the complex nature of the decision making at the community level.

### ***Promote health in an intercultural context***

“PHM recognizes that inter-culturality is a fundamental element to promote social equity and build a fair health system. Equity in access to health information is a fundamental human right. It is essential in the struggle for indigenous people’s health. People’s knowledge should be incorporated into the development of culturally based equitable health services; culturally sensitive prevention programs; the training of health workers in intercultural skills; achieving fair conditions of work; food security; and a healthy ecosystem. ....”

PHM will incorporate cultural and spiritual practices in all aspects of its work.

***The power of the People’s Health Movement can change the world. Another world, which includes Health for All, is possible. We must all demand and struggle towards a world in which health is a right.....”***

***The Cuenca Declaration, People’s Health Movement, 2005***

## **ROUND TABLE 6: CREATING SYNERGIES BETWEEN DIFFERENT SYSTEMS OF TRADITIONAL MEDICINE**

**MODERATOR: RAVI NARAYAN**



This special round table discussion held at Government Ayurvedic Medical College in Bangalore, brought together the conference speakers from different countries of South Asia region and teachers and students of different institutionalised systems of traditional medicine in India. The conference speakers from different countries presented an overview of traditional medicine from their own contexts.

This was followed by representatives of Ayurvedic, Unani and Homeopathic medical colleges in Bangalore (Dr. K. S. Jayashree, Dr. S. S. Khalid and Dr. Deshmukh), provided insights about the principles and philosophy of each school of healing.

The round table discussions in the Government Ayurvedic Medical College concluded with visits to the different health care services provided by the Ayurvedic hospital and the herbal plants garden of the medical college.

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## **SUMMARY OF KEY ISSUES**

The various presentation and discussions during the conference highlighted the varying status of the traditional systems in the South Asian region. While certain aspects such as governmental support, research and training capacity, legal frameworks etc. differed among the countries of the region, some aspects like the adverse effect of environmental degradation and poverty on the practice, development and accessibility (especially of the poor and marginalized) of traditional systems were common in the whole region. The conference clarified that when referring to traditional systems, both the codified as well as the non-codified systems were being referred to.

Some of the major issues / points that were discussed during the conference include the following:

- Poverty, inequity and environmental degradation as a cause of erosion of traditional systems.
- Links between the community and traditional systems.
- Issues regarding integration of different systems.
- The role of the state.
- Issues regarding research and evaluation.
- Future directions of research on traditional systems.
- Issues regarding the International Trade Regimes.

### **POVERTY, INEQUITY AND ENVIRONMENTAL DEGRADATION AS A CAUSE OF EROSION OF TRADITIONAL SYSTEMS**

Presentations and experiences shared from all the countries of the region reflected the fact that poverty and exploitation/degradation of environment by corporates has led to an erosion of the vitality of the traditional systems. It was pointed out that the seeming freedom of choice as well as the popularity of traditional systems in some countries where there were plural systems may in fact be dictated by the financial inaccessibility of the western medical system. It was also pointed out that with the degradation of traditional systems the people to be most affected are the poor and the marginalized, who depend on it in the first place.

Poverty and livelihood destruction both lead to over exploitation of the local natural resources as well as migration to urban areas in search of jobs. Both of these processes have their obvious negative impact on the practice and development of traditional systems.

The changing agricultural practices including the increasing use of pesticides, crop monoculture, introduction of genetically modified crops and the move towards cash crops and a market led system all have adverse effects on biodiversity as well on traditional systems.

Similarly the over exploitation of the natural raw materials, the pollution of the environment and the degradation of the soil as a result of the pollution lead to a concern about the quality and biological activity of the plants grown in such a situation.

## **LINKS BETWEEN THE COMMUNITY AND TRADITIONAL SYSTEMS**

It was emphasized throughout the conference that the traditional systems evolved from the experiential knowledge and experience of local communities. Moreover the main characteristic of the traditional systems were their organic links with local communities.

It was pointed out that the more codified and institutionalized systems were however losing touch with communities given the increasing commercial nature of life styles, the medicalization of illness as well as the changing modes of education (the erosion of traditional systems of education). It was emphasized that there needs to be a process of demystification as well as efforts to make these more community centered, community owned and controlled.

It was also pointed out with examples that local communities had the wisdom of ages and were able to effectively maintain ecosystems and local livelihoods without adversely affecting either.

## **ISSUES REGARDING INTEGRATION OF DIFFERENT SYSTEMS**

The participants clearly stated that they felt that integration of different components into one hybrid system would be a very artificial process. Each system emerges from the local community, based on the local resources and culture. Thus each has a unique paradigm, this would lead to great problems during any integration process.

It was however felt that there could be integration in the sense of different systems functioning in the same premises or same program with the patients/communities making a choice based on any criteria they use.

## **THE ROLE OF THE STATE**

While at one level there was a call for the government to increase the investment in traditional systems' development, educational institutions and research, development of strong national level legislation for the protection of biodiversity in line with the Convention on Biodiversity, as well as the setting up of regional level processes like regional licensing, faculty exchange and technical cooperation, at another level there was a clear message that the government should promote strengthening of community involvement and ownership in the protection and the monitoring as well as the rejuvenation of the natural resources.

The conference also felt that the government and its departments should attempt to come up with standard treatment guidelines, essential drug lists and such other protocols for quality control.

## **ISSUES REGARDING RESEARCH AND EVALUATION**

There was an unequivocal rejection of the blind use of the western biomedical clinical trial and a reductionist approach to analysis as the "gold standards" of research and evaluation. It was reiterated that every system has to come into any

multidisciplinary work as equal partners. It is important for each system to try and understand how the other systems approach disease, symptomatology, how they evaluate drugs and how they regulate the over exploitation of natural resources.

Given the multidimensional conceptualization of disease and the paradigm of balance and equilibrium used, both research and evaluation methods have to incorporate these. This called for the use of such techniques as experiential approaches and inductive approaches to reasoning.

Moreover given the holistic vision of a drug in the traditional systems and a lack of conceptualization of the various ways in which a drug can work it was important to work with the crude extract rather than attempt to isolate a single active principle. It was also important for research institutions to work closely with community groups/communities so that the research done is relevant and organically linked to communities.

### **FUTURE DIRECTIONS OF RESEARCH ON TRADITIONAL SYSTEMS**

It was stressed that there was a definite need for good documentation and research on the traditional systems. In some countries the emphasis was on good documentation while in others there was discussion of molecular techniques and tissue culture.

There were suggestions to concentrate on research into areas where western biomedicine did not have answers, and where the traditional systems had less toxic alternatives to offer.

Similarly there was a call for research on the clinical effectiveness of the various remedies based on patient feed back and documentation.

### **ISSUES REGARDING THE INTERNATIONAL TRADE REGIMES**

There was unanimity in the conference that the present international trade regimes were inequitable, exploitative and unjust. It was felt they would only encourage bio-prospecting and bio-piracy, leading to an over exploitation of precious natural resources, with little returns to the local communities. Thus these regimes which prioritizes people over profit' will in their present form, only lead to the further erosion of biodiversity and traditional knowledge systems.

There was a call for the development of strong national level legislation to protect biodiversity, and it was suggested that the Convention on Biodiversity was more comprehensive and just as a framework to follow than the other trade regimes and agreements.

It was thus clearly shown that for the rejuvenation of the traditional systems as well as to enable them to play their potential role in achieving Health for All concerted, multidimensional as well as multidisciplinary efforts need to be made by all relevant stakeholders. During this process we need to keep in mind who we are representing – and here the conference was again unanimously in agreement that we needed to raise our voices on behalf of the poor and marginalized of South Asia and the world.

**TRADITIONAL MEDICINE & RIGHT TO HEALTH FOR ALL  
SOUTH ASIAN REGIONAL CONFERENCE  
PROGRAMME OUTLINE**

**12 DECEMBER 2006**

	Arrival of participants
19.30 to 20.30	Meeting of the key persons to review the programme and workout the details (Dr. K. Balasubramaniam, Dr. Ravi Narayan, Mr. M. V. Jose, Dr. Mira Shiva, Dr. Rakhil Gaitonde - Rapporteur, Dr. Sunil Deepak)

**13 DECEMBER 2006**

09.00 to 10.00	Inauguration <ul style="list-style-type: none"> <li>• Dr. E. Pupulin, AIFO Board member, Italy</li> <li>• Dr. Sunil Deepak, Conference Promoter, AIFO, Italy</li> <li>• Dr. H. Sudershan, Representative India</li> <li>• Ms. Anu Dhindaw, Technical Unit, Italian Embassy</li> <li>• Ms. Maria Pia Macchi, representative COE, Italy</li> <li>• Mr. M. V. Jose, AIFO representative, India</li> </ul>
10.00 to 10.30	Dr. K. Balasubramaniam (HAI-AP) <b>Role of Traditional Medicine in promoting wellbeing of communities in South Asia - an introduction to the conference</b>
10.30 to 11.00	Tea/Coffee break
11.00 to 13.00	<b>Presentations on Situation of Traditional Medicine in our country</b> (20 minutes each) <ul style="list-style-type: none"> <li>• <b>Bangladesh:</b> Ms. Farida Akhter, UBINIG</li> <li>• <b>Bhutan:</b> Dr. Dorji Wangchuk, NITM</li> <li>• <b>Nepal:</b> Dr. Rishi Ram Koirala, National Association of Ayurveda</li> <li>• <b>Sri Lanka:</b> Dr. R. S. Jayawardene, NIIM</li> <li>• <b>India:</b> Dr. Darshan Shanker, FRLHT &amp; Consultant AYUSH</li> </ul> <b>Discussions</b>
13.00 to 14.30	Lunch break
14.30 to 15.45	<b>Role of Traditional Medicine in promoting wellbeing - views from grassroots</b> moderated by Dr. Farida Akhter (Bangladesh) <ul style="list-style-type: none"> <li>• Vd. Smita Bajpai, Chetna, India</li> <li>• Dr. Sarita Shrestha, Nepal</li> <li>• Dr. Deepa Chandran, KSSP, India</li> </ul>
15.45 to 16.15	Tea/Coffee break
16.15 to 17.30	Roundtable discussion 1 <b>Promoting Networking across different domains of traditional medicine in south east Asia</b> - achievements and challenges Moderator: Dr. Rishi Ram Koirala (Nepal)

	<ul style="list-style-type: none"> <li>• Prof. Tuley de Silva, Sri Lanka</li> <li>• Dr. Dorji Wangchuk, Bhutan</li> </ul>
18.00-22.30	Special dinner for all participants

## 14 DECEMBER 2006

09.00 to 10.30	<p>Roundtable 2</p> <p><b>Biodiversity and sustainability issues in communities</b></p> <p>Moderated by Dr Mira Shiva, PHM, India</p> <ul style="list-style-type: none"> <li>• Mr. Lakshminarayan, c/o NIMHANS Bangalore, on preserving ancient texts (sharing of personal experience) (not present)</li> <li>• Mr. Narayan Kaji, WATCH Nepal</li> <li>• Ms. Rokeya Begam, UBINIG, Bangladesh</li> </ul>
10.30 to 11.00	Tea/Coffee break
11.00 to 13.00	<p>Roundtable 3</p> <p><b>Conducting research on safety and efficacy of different traditional medicine therapies</b></p> <p>Moderated by Prof. Tuley de Silva, Sri Lanka</p> <ul style="list-style-type: none"> <li>• Dr. Tannaz J. Birdi, FRM, India</li> <li>• Dr. Drungtsho Tempa Gyeltshen, Bhutan</li> <li>• Dr. Sankaran Namboodiri, GK, Bangladesh</li> <li>• Dr. Ravi Narayan, for FRLHT, India</li> </ul>
13.00 to 14.30	Lunch break
14.30 to 17.00 including 30 min. break	<p>Roundtable 4</p> <p><b>Role of Traditional Medicine in the strategy of "Health for all" - sharing of experiences on achievements and challenges</b></p> <p>Moderated by Dr. Shirdi Prasad Tekkur (India)</p> <ul style="list-style-type: none"> <li>• Dr Ravi Narayan, PHM Coordination</li> <li>• Dr Rakhal Gaitonde, Pune, India</li> <li>• Dr.H. Sudershan, VKSS, India</li> <li>• Draft declaration on "Role of Traditional Medicine in reaching the goal of "Health for All"</li> </ul>
17.00 to 17.30	<p>Conclusions</p> <ul style="list-style-type: none"> <li>• Dr. Balasubramaniam, Technical coordinator for the conference</li> <li>• Dr. S. Deepak, Conference promoter, AIFO, Italy</li> </ul>
<p><b>15.12.2006</b></p> <p>Special Round Table for Staff and students of Medical Colleges: Promoting and harmonising synergies between different medical systems for fulfilling people's right to health</p> <p>Auditorium, Government Ayurveda Medical College, Dhanvantri Road, Bangalore</p>	
10.00 to 13.00	<p>Moderated by Dr Ravi Narayan, People's Health Movement, India</p> <ul style="list-style-type: none"> <li>• Dr.K.S. Jayashree, Ayurveda Medical College</li> </ul>

	<ul style="list-style-type: none"><li>• Dr. S.S. Khalid, Unani Medical College, Bangalore</li><li>• Dr.Deshmukh, Homeopathy Medical College, Bangalore</li><li>• Dr.Farida Akhter, Bangladesh</li><li>• Dr. Dorji Wangchuk, Bhutan</li><li>• Prof. Tuley de Silva, Sri Lanka</li><li>• Dr Sarita Shrestha, Nepal</li><li>• Debate and conclusions</li></ul>
	End of the Conference



**Dr Mani and Mr. Jose from AIFO-India**

## PARTICIPANTS LIST

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**Note:** There were many other participants, especially the students at the special session organised at Government Ayurveda Medical College, whose name and emails are not available here.



**At the Government Ayurvedic Medical College, Bangalore**

## PART 2

### INDIVIDUAL PAPERS & PRESENTATIONS



# **ROLE OF TRADITIONAL MEDICINE IN PROMOTING THE WELL-BEING OF THE PEOPLE IN SOUTH ASIA**

## **K BALASUBRAMANIAM, SRI LANKA**

### **SUMMARY**

All countries in South Asia have a rich heritage of Traditional Medicine (TM). According to the World Health Organization (WHO), large segments of the population in countries of South Asia are served by practitioners of TM. If large segments of the population resort to TM for their healthcare needs, the government should evolve public health policies to ensure that the herbal remedies prescribed by the practitioners of TM or bought over the counter are safe, effective and of good quality. According to the WHO, only 25 of WHO's 191 Member States have developed public policies on TM.

The objective of this conference is to promote the continuous development of TM in the region to maximize their contribution to public health. The agenda has been structured to achieve the objective of the conference. The major thrusts of this agenda are to:

- Review the current situation in countries of the region;
- Introduce the concepts of quality, efficacy and safety of herbal and other remedies used in TM.
- Preserve the community knowledge, folk-lore and biodiversity found in abundance in countries of the region.
- Explore the possibilities of regional and sub-regional collaboration by promoting networking of practitioners of TM and health activists at the grass-roots levels.
- Examine the role of TM in achieving Health for All as outlined in Alma Ata in September 1978.

These issues will be taken up at round table discussions with a moderator and selected number of resource persons. The discussions will help the participants examine in-depth the prospects and problems facing practitioners of TM, the communities served by the practitioners, policy makers, regulators and research scientists in their efforts to make use of the full potential of TM to improve and promote the health and well-being of people in the region.

As a health activist, I look forward to the in-depth discussions on several issues related to TM enabling the participants to identify major components of a public policy on TSM. Such a policy will provide a sound basis for defining the role of TM in national healthcare delivery, ensuring that the necessary regulatory and legal mechanisms are created for promoting and maintaining good practice, that access is equitable and that the authenticity, safety, efficacy and quality of therapies are assured.

Moreover, it can help to ensure sufficient provision of financial resources for education, training and research. An increased number of national policies on TSM in the region would have the added benefit of facilitating collaborative

activities on regional issues such as development and implementation of regionally accepted norms for quality, safety and efficacy of TM, sustainable use of medicinal plants and protection and equitable knowledge of indigenous and traditional medicine.

## **INTRODUCTION**

I am honoured to be given the opportunity to give an introduction to this conference where very knowledgeable practitioners and research workers in traditional medicine are presenting papers and taking part in round table discussions.

The objective of this conference is to promote the continuous development of traditional medicine in the region to maximize its contribution in preserving and improving public health. The agenda has been structured to achieve the objective of the conference. I see the agenda structured in two sections:

- Situation analysis and sharing of experiences and
- Action oriented round table discussions.

Situation analysis will give us a baseline from where we can take off and two important issues have been identified:

- Carrying out research to evaluate safety and efficacy of different traditional medicine therapies.
- Action plans to preserve and safeguard the bio diversity, sustainability and traditional knowledge.

I shall focus on these two action oriented round table discussions. I shall present two scenarios and wish to underscore that the two are mutually exclusive. Each one is equally important. However, I wish you to consider which is relevant to achieve the objectives of this conference.

## **EVALUATION OF SAFETY AND EFFICACY OF TRADITIONAL MEDICINE**

I believe that this conference will focus on herbal remedies which constitute the therapeutic armamentarium of traditional systems of medicine in the region.

The World Health Organization (WHO) has defined herbal medicines as "Finished labeled medicinal products that contain ingredients from aerial or underground parts of plant parts or other plant material or combination thereof, whether in the crude state or as plant preparations.<sup>(6)</sup> The same WHO document adds "Medicines containing plant material combined with chemically defined active substances, including chemically defined substances and isolated constituents of plants are not considered to be herbal medicines".

It will therefore, follow that chemically defined isolated constituents of plants used

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<sup>6</sup> World Health Organization; *WHO Technical Report Series* No 863, 1996. Annex 11. Guidelines for the Assessment of Herbal Medicines, pp 178-183.

in modern medicine are not herbal medicines, it has been estimated that these medicines derived from plants constitute about 25 percent in modern pharmacopoeia.<sup>(7)</sup>

The World Health Organization posed a question in 2002<sup>(8)</sup>, whether a herbal medicine can be used clinically if no harm has been found after the use of that herbal medicine for generations and there is no documentation of such an effect. For an answer to the question, reference is made to an earlier WHO document published in 2000<sup>(9)</sup>, which states "Absence of reported or documented side effect is not an absolute assurance of safety of herbal medicine. However, a full range of toxicology tests may not be necessary. Tests which examine effects that are difficult or even impossible to detect clinically should be encouraged. Suggested tests include immunotoxicity, genotoxicity, carcinogenicity and reproductive toxicity". It adds the following caveat, "only when there is no documentations of long historical use of a herbal medicine or when doubts exist about its safety, should additional tests be performed.

A rigid framework that has been prepared for modern synthetic drugs will never be possible for herbal medicines. There has to be some flexibility in toxicological requirements for herbal medicines.

Accordingly, a group of experts met in Chandigarh in India, to develop a suitable framework for carrying out toxicological studies on herbal medicines. The framework developed was broadly accepted by the Indian Council of Medical Research and the WHO. The actual tests to be carried out in the Chandigarh model are given in tables 1 & 2. The tests recommended by the WHO are given in Table 3.

WHO has called on clinical researchers to conduct clinical evaluation of traditional medicines within the specific framework of rigorous clinical pharmacological principles without ignoring or trampling on the concepts of the traditional systems of medicine.

I wish to take this opportunity to present an alternate view for evaluation of traditional medicine.

Traditional systems of medicine are a summation of several thousands of years of human experience in the selection of plants for preventive and curative healthcare.

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<sup>7</sup> De Silva T, "Production of the Herbal Medicines in Developing Countries, paper presented at the International Symposium on Herbal Medicine, Honolulu, Hawaii, 1-4 June, 1997 organized by the University of San Diego in California in Collaboration with the United National Industrial Organization

<sup>8</sup> Chandhury R R & Chandhury M R, "Standardization, preclinical toxicology and clinical evaluation of medicinal plants, including ethical in Traditional Medicine in Asia, New Delhi (2002)

<sup>9</sup> General Guidelines for methodologies on research and evaluation of traditional medicine WHO, Geneva 2000. <sup>5</sup> Chaudhury R R Herbal Medicine for Human Wealth. WHO-SEARO – New Delhi, 1992

Practitioners of traditional systems of medicine argue that the efficacy of herbal remedies is due to the synergistic activity among the several ingredients of herbal mixtures. Complex mixtures of plants or herbs form the basis of traditional medicines. The mixtures are usually subject to crushing, heating, boiling, etc. It is possible that this process may change the chemical structure of the active ingredients in the plants.

Clinical pharmacologists and other scientists working on medicinal plants, on the other hand, focus all their attention on isolating and identifying biologically active ingredients in medicinal plants and herbs. When a promising new biologically active chemical ingredient is isolated, it goes through all subsequent investigations identical to those for a new synthetic chemical ingredient.

**Table 1. Tests required for subacute toxicology studies**

Liver function	Serum Albumin/Globulin, Total proteins Alkaline phosphatase, Bilirubin SGOT/SGPT
Renal function	Blood Urea Serum Creatinine
Heamatology	Heamoglobin RBC, WBC Total and Differential, ESR, PCV
Others	Cholesterol, Glucose

**Table 2. Duration of toxicity studies**

Single administration or repeated administration for less than one week	2 weeks to 1 month
Repeated administration from one week to four weeks	4 weeks to 3 months
Repeated administration between one to six months	3 to 6 months
Long-term repeated administration for more than six months	9 to 12 months

**Table 3. Toxicity profile recommended by WHO for herbal medicines(10)**

Acute toxicity	Tests should be performed on two species — one rodent and one non-rodent. Males and females from one species at least. Five animals per group per sex in rodents and at least two animals per sex in non-rodents. Oral route orally or route of intended administration Different dose levels
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Observation studies	Toxic, signs, reversibility of signs. Animals to be observed for 7-14 days. Autopsy of any animal which dies with histopathology of organ showing macroscopic changes at autopsy.
Long-term toxicity	Two species one rodent and one non-rodent. Both sexes to be used.  Rodents – 10 male and 10 female. Non-Rodents – Both sexes to be used Rodents – 10 male and 10 female. Non – Rodents- three males and three females. Route - expected route of clinical use. Administration period will vary with expected period of clinical use. Three different dose levels administered seven days a week.
Observation studies	General signs, body weight, food and water intake - Haematological examination Renal and hepatic function tests
Other tests of appropriate period of administration recommended	E.C.G.; Visual and Auditory

Traditional healers do not accept that the efficacy is necessarily due to the active ingredients in the plant.

According to the active ingredient approach the modern clinical pharmacologists, take the knowledge from the plant but throws away the wisdom of centuries.

If there is acceptable historical evidence that traditional herbal remedies have been effective in the treatment of certain diseases, but neither their active ingredients nor the mechanisms are known, is it ethically or morally acceptable to not use that treatment? Examples of successful treatment by traditional medicines will be useful to answer these questions,

In the late 1980s children attending the Dermatology Department, Hospital for Sick Children, Great Ormond Street, London showed marked improvements in their eczema symptoms. These improvements were due to oral treatment with aqueous decoctions of a mixture of 10 Chinese medicinal herbs<sup>10</sup>. Clinical experimentation and pharmacological testing revealed that a mixture of the 10 herbs were necessary and that the efficacy could not be attributed to any single active ingredient from any one of the 10 Chinese herbs. A placebo controlled double-blind clinical trial using the 10 Chinese herbs was carried out on 47 selected children with non-exudative eczema. The conclusions of the trial were to validate the standard of current conventional clinical trials utilized in the UK that

<sup>10</sup> Harper, J I Et al 1990, "Chinese herbs of eczema", The Lancet, 335: 795

the traditional Chinese therapy was efficacious.<sup>11</sup>

If these children had to wait till the clinical pharmacologists had screened the 10 Chinese plants for active ingredients and tested them for biological activity, they would never have been given the chance of getting effective treatment with a mixture of 10 Chinese herbs.

Potential cytotoxic drugs are tested for their activity against experimental or human cancer cells. Efficacy depends on the ability to kill specific cancer cell types without affecting normal body cells. Studies on the effects of certain Ayurvedic herbal preparations for possible cytotoxic activity revealed that these herbal preparations did not kill the cancer cells but transformed them into normal healthy cells.<sup>(10)</sup> These drugs, therefore, have a different mechanism of action, Classical testing methods would have missed this important anti-cancer activity.

I wish to pose a philosophical question. Is medical science one universal and uniquely expressed (western) paradigm – a biomedical paradigm? If it is possible to conceive of alternative methodologies, theories and practices in other domains such as music, logic, linguistics, art and politics, is it not possible to consider possibilities of alternative methodologies in medical science, knowing that doctors practice medicine within a bio-psycho-social paradigm?

The guiding principles by which knowledge is built up in the biomedical paradigm are those of the scientific method where hypotheses are clearly stated, then tested and accepted or rejected as truth "until further notice" or "within the stated confidence limits" using only experimental or quasi-experimental designs – a deductive approach to problem solving.

Is it possible for research scientists to examine other methodologies, for example, using experiential methods – an inductive approach, to evaluate traditional herbal remedies?

There is an enormous amount of research on medicinal plants in research institutes in developing countries and the transnational drug industry.

Based on the WHO definition of herbal remedies and the herbal remedies used by practitioners of the traditional system, I wish to pose the following questions:

The Indian Council of Medical Research has taken the plant *Pterocarpus marsupium* from its use in folklore and Ayurvedic medicine to Phase III clinical evaluation for the treatment of diabetes mellitus using well accepted pharmacological principles.<sup>(11)</sup> It was handed over to the industry for

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<sup>11</sup> Sheeha, M P and Atherton, D J 1992. A controlled Trial of Traditional Chinese medicinal Plants in Widespread Non-Exudative Atopic Eczema, British Journal of Dermatology, 126:179-184.

<sup>10</sup> Bodeker, G.1994. "Traditional Health Knowledge & Public Policy": Nature and Resources, Vol 30, No 2; 5-16.

<sup>11</sup> Chaudhury R R (2001) Antidiabetic effect of Vijayasar *Pterocarpus marsirpium*.

pharmaceutical development and marketing. This product will be marketed to practitioners of modern medicine. Table 4 lists some examples of modern drugs derived from plants that have been used in the traditional systems of medicine by ancient people around the world.

**Table 4. Drugs from ethnotherapeutic field**

Drugs	Ethnotherapeutic information
Morphine	Opium used by ancient Egyptians and Sumarians
Atropine	Used by Babylonians
Ephedrine	Used by the Chinese for respiratory ailment (2700 BC)
Quinine	Used by Peruvians for fever
Emetine	Used by Brazilians and South Americans for dysentery and to induce vomiting
Digoxin	Used in England in the 17th century for heart illness
Tubocurarine	Used as arrow poison by Red Indians
Reserpine	Rauwolfia serpentina used as "Folklore" remedy for mental diseases in Bihar (north India)
Artemisin	Used in ancient Chinese medicine for fever

- Modified for Table 1 in reference: Suhk Deo, Source: Gaitonde B 8 "Research, drug development and manufacture of herbal drugs" in Traditional medicines in Asia, opcit.

The question I wish to pose is as follows: "Will this type of research and development to isolate therapeutically active chemical ingredients achieve the objectives of this conference which is to promote the continuous development of traditional medicinal in the region to maximize its contribution in preserving and improving public health?"

Let me make it clear that R & D to isolate therapeutically active ingredients from medicinal plants is of critical importance. There is no doubt about it.

But what I wish for you'll to discuss is the need for research to evaluate the safety and efficacy of the herbal remedies used by practitioners of the traditional systems of medicine. For example table gives a 5 list of Ayurvedic remedies for some common ailments.

**Table 5 Treatment of Common Diseases**

To deal with various common diseases at the primary health care level, many time-tested standard Ayurvedic formulations are highly effective.

Common Diseases	Treatment	Common Diseases	Treatment
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Common Cold	Laxmivilas rasa and Godanti Bhasma	Bacillary Dysentery	Sanjivani and Shankhodar
Fever	Tribhuvarikirti rasa, Godanti Bhasma and Sudarshan Ghanvati	Piles	Arshakuthar rasa
Hyper Acidity and Duodenal Ulcer	Sutshekhar rasa, Shankh Bhasma	Hepatitis	Arogyavardhani rasa Liver Diseases
Cough	Sitopaladi Khadiradivati	Dysfunctional Uterine Bleeding	Pushyanug
Gastro-intestinal problems	Shankhvati	Urinary Tract infection	Chandraprabha vati
Diarrhoea	Jatiphaladi, Karpura rasa	Arthritic Condition	Yograj guggulu and Rasnadi kvath
Diarrhoea and Amoebic Dysentery	Kutajghanavati	Gout	Kaishore guggulu
		Bronchial Asthma	Shvasa kuthar rasa
		Various Eye Diseases	Saptamrata lauha and Mahatriphalaghrita

Source: Kurup P N V. "Ayurveda" in Traditional Medicine in Asia, pal.

Is there a need to develop appropriate methods for clinical evaluation of traditional herbal medicines: methods and criteria not to be limited to the methods and concepts of modern biomedical science.



comparison group.

The next issue we shall consider is: **Preserving and safeguarding Biodiversity, sustainability and traditional knowledges.**

In order to preserve and safeguard biodiversity, sustainability and traditional knowledge of medicinal plants, we need to examine intellectual property rights (IPRs) and the TRIPS Agreement.

An Intellectual Property (IP) is a creation of the Mind. Examples: artistic and literary works inventions, trade marks.

For protecting Herbal Medicines we need to focus on inventions. An invention is a process or a product which is new, useful and capable of manufacture. A patent is an intellectual property right (IPR) given for an invention by a government for a limited period of time.

For an invention to be patentable, it has to meet the following criteria:

- Novelty
- Inventiveness or inventive step
- Industrial applicability

Can herbal medicines be patented?

- Herbal medicines have been in use for centuries.
- Knowledge of their preparation is well known and documented.
- Neither the product nor the processes are new.
- Therefore herbal medicines that are in use cannot be patented.

But in March 1995, a United States patent on "Use of Turmeric in wound healing" was granted to the University of Mississippi Medical Centre. In 2000, a patent was granted to WR Grace Company and the US Department of Agriculture on Neem.

Under the US Law, Novelty is destroyed if an invention has been disclosed:

- Through publication; or
- Through use in US

Use of a herbal medicine outside the US does not destroy novelty. The US government justification is: if information is not written down, that information is completely inaccessible to patent examiners as prior art when they examine patent applications. It is possible, therefore, for a patent to be issued claiming as an invention technology that is only known to a particular indigenous community.

The patent was revoked when references to prior art was presented by CSIR which requested re-examination. A re-examination request for the patent on Basmati rice lines and grains granted by the US was also made by CSIR.

- Patent applications should be written in legal and scientific language. This requires services of very expensive patent lawyers. Costs of filing a patent are high.
- Protection against infringement. Legal action to defend a patent is very

expensive.

- An infringing company with considerable financial resources and access to eminent patent lawyers may well succeed in convincing the court that its product, or process or use are sufficiently different from the original to constitute an invention of its own or at least not to constitute an infringement.

The ongoing national, regional and international debates and discussions on IPR and herbal medicines are, therefore, not to explore possibilities for providing patent protection to herbal medicines but to:

- Protect traditional knowledge Prevent bio piracy; and
- Conserve genetic resources, medicinal plants and biodiversity.

A large number of patents have been granted on genetic resources and traditional knowledge obtained from developing countries without the consent of the possessors of the resources and knowledge.

- The TRIPS Agreement which is designed to protect IPRs is silent about the bio piracy of traditional knowledge and medicinal plants
- TRIPS does not find out from where the patent applicant obtained his knowledge.
- TRIPS allows countries to allow patenting of micro-organisms and micro-biological processes.

These two factors and together with the loose interpretation of "inventiveness" in national patent offices allow the patenting of traditional knowledge and genetic resources or bio piracy.

If a two percent royalty were levied on genetic resources, the North would owe South more than US\$ 5 billion in royalties for medicinal plants

Uncontrolled and unregulated commercial collection of genetic resources and harvesting and processing of medicinal plants have led to the near extinction of some very valuable medicinal plants.

Protecting traditional knowledge conservation of biodiversity, genetic resources and medicinal plants has therefore, become a global emergency. In response to this crisis, a number of inter governmental and international agencies have set in motion a series of initiatives for protection of traditional knowledge and conservation of genetic resources, bio diversity and medicinal plants.

#### International Initiatives

- Convention on International Trade on Endangered Species (CITES) 1975
- The Chiang Mai Declaration 1988
- 3, The Declaration of Belem, Brazil, 1988
- The Arusha Declaration, 1990
- The Convention on Biological Diversity 1992
- First World Convention on Medicinal and Aromatic Plants for Human Welfare 1992
- The 7th Asian Symposium on Medicinal Plants, Spices and other National Products, 1992

- African Ministerial Conference on Environment, 1994
- Intergovernmental Committee on Intellectual Property, Traditional Knowledge and Folklore (The WIPO Committee 2000)

The objectives of protecting Traditional Knowledge (TK) include the following:

- Prevent misappropriation of TK (bio-piracy);
- Preservation of traditional practices and cultures;
- Promotion of TK and its importance in R&D of traditional medicines;
- Conservation of medicinal plants, genetic resources and biodiversities; and
- Fair and equitable distribution of the benefits derived from technologies and innovations based on TK.

At present there is no consensus on what would be the most appropriate way of protecting TK to achieve the above objectives. TK can be protected within and outside the IPR's system. IPR's are seen as one possible mean to protect TK. There are strong supporters and severe critics of extending IPRs to protect TK.

In view of the lack of consensus, it may be premature to initiate discussions towards development of International standards in the framework of the World Trade Organization (WTO). The immediate priority should be the development of global rules to prevent the misappropriation of TK and use these as guidelines to develop national laws to prevent bio piracy.

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# **PRESENT STATUS OF TRADITIONAL MEDICINE IN NEPAL**

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## **BACKGROUND**

The term Traditional Medicine (TM) refers to way of protecting and restoring health that existed before the arrival of modern allopathic medicine. As the term implies, these approaches to health belong to the traditions of each country, and have been handed down from generation to generation. TM includes diverse health practices, approaches, knowledge and belief incorporating plant, animal and/or mineral based medicines, spiritual therapies, manual techniques and exercises, applied singularly or in combination to maintain well-being as well as to treat, diagnose or prevent illness (WHO).

The WHO Traditional Medicine Strategy paper 2002-2005 explains that traditional, complementary and alternative medicine attracts the full spectrum of reactions, ranging from uncritical enthusiasm to uninformed skepticism. Yet the use of traditional medicine remains widespread in developing countries. In many parts of the world, policy-makers, health professionals and the public are wrestling with the question about the safety, effectiveness, quality, availability, preservation and further development of this type of health care. Meanwhile, in many developed countries, complementary and traditional medicine is becoming more and more popular.

## **SITUATION OF EXISTING TRADITIONAL HEALTH SYSTEMS IN NEPAL**

Ayurveda, Amchi, Homeopathy associating with Unani, Naturopathy are the important traditional health system existing in Nepal. Among them, Ayurveda has been practicing since the time immemorial.

## **AYURVEDA**



Ayurveda is the omnipresent science of our rich tradition, heritage, and century-old knowledge. It is the most authentically recorded, culturally based health system in Nepal. Furthermore, this traditional knowledge provides great wealth and heritage to our nation.

The history of Ayurveda can be traced to different periods, the earliest being the Vedic period when the Aryans compiled the four Veda (1500-800 BC) with maximum reference in *Rigveda* and *Atharvaveda*. Ayurveda originated in heaven from Brahma. Brahma passed this knowledge to *Dakshaprajapati* then to *Ashwinikumars*. Then it transmitted to Lord *Indra*. On the earth, *Maharshi Bharadwaj* approached Lord *Indra* and got it. **(Pic. Yarchagubma herb)**

Two types of Ayurveda practitioners exist in Nepal. First, Ayurveda based traditional healers, who are practicing this knowledge since the time immemorial and it has been established as family profession and tradition. Second, academic Ayurveda practitioners trained from educational institutions, training centers, colleges and universities,

### **HOMEOPATHY**

This system has been recognized as a national health system and a homeopathy hospital is running by government since 2010 BS. The only one hospital in the country is located in Kathmandu with three graduated doctors studied in India. But the junior level technicians (total eight in number) associated with hospitals are from Allopathic background with refresher training on Homeopathy. There is no separate regulatory body to control and monitor this system of medicine and to register practitioners like in modern medicine (Nepal Medical Council) and Ayurveda (Nepal Ayurvedic Medical Council). The Unani system of medicine is also incorporated in this hospital. Nearly one hundred and fifty Homeopathy technicians are practicing in the Kathmandu city registering in Health Professional Council (informal data given by the staff of the hospital). It is learned that this system of traditional medicine has been running with several confusions and dilemma due the lack clear policy and planning the state. Recently, formal education in Homeopathy has begun in Nepal.

### **NATUROPATHY**

This is not an official system of medicine, but it has been well-practiced by the community. Training in naturopathy is provided by the private sector. There are private hospitals, training centers, clinics, and dispensaries in the country.

### **AMCHI**

*Amchi* is a Tibetan medicine or healing practice existing in the upper Himalayan region of the country. This is not an official system of medicine. There are two types of practitioners in this system. Some of them are institutionally trained and others follow the tradition. No official records regarding this system of medicine and manpower involved are available in Government offices. Reports show (as published in print Medias) that this system has been remarkably contributing in Northern area, especially Far Western Region, for treatment of various kinds of ailments using the locally available medicinal plants. The practitioners have been claiming official recognition and formation of separate regulatory body since long time.

### **FAITH & SPIRITUAL THERAPIES**

A large number of the population is still dependent on these practitioners. Basically they follow some ethno-traditional, *tantrik*, spiritual and Ayurvedic knowledge. Though they are not included in the official system of health care system, they are well known by different names in different communities.

## **AYURVEDA: PRE-HISTORIC LEGENDS OF HIMALAYA IN NEPAL**

The root of Ayurveda dates back to the Vedic period. Ayurveda, the life science, is also the oldest authentically recorded science in existence today. Based on the pre-historic documents, the first international Ayurveda congress was held on the lap of the Himalayas. According to the *Charak samhita* there were 52 eminent scholars, rishi and experts that gathered there and performed meditation, afterwards discussing, developing and documenting this science. Therefore, the Himalayan region receives recognition and praise for its highest knowledge, aspiration, purity, and harmony of life. This region is also the source of many highly valued medicinal plants. Ayurveda is an ancient art of healing or medicine, which has been practiced continuously throughout Nepal, India, Sri Lanka and a few other countries since ancient times. This knowledge of Ayurveda can be found in a number of manuscripts, books, healing practices, in cultural functions and ceremonies, and the teachings and practices of traditional healers. In fact, the practice of Ayurveda is essentially a culturally based health system. Furthermore, it was a way of life for the community, and its educational value was highly regarded.

## **THE CULTURAL HERITAGE OF THE HIMALAYA**

Nepal is one of the richest countries in culture, tradition, and knowledge of Ayurveda and traditional health practices. In fact, Ayurveda has a strong cultural and scientific heritage in this country. Nepal eluded foreign invasions in its history and has unique socio-cultural and traditional practices. These practices still exist today, in various different ways such as: ethnic or tribal groups, social, familial, generation to generation, ritual, or ceremonial practices, daily routines or spiritual practices, diets or self-healing practices, traditional healers, yogis, monks, lamas etc. among the institutional trained practitioners.

The majority of people in Nepal continue to rely on this system of health care. Ayurveda and the traditional medical wisdom and practices are prevalent in the community and are totally dependent on locally available medicinal herbs, knowledge, technology and their application. The country has contributed many valuable medicinal and aromatic plants, locally termed as **jadibuti**, and the indigenous people have been using them in traditional ways for their health and economy since time immemorial. This system contributes to a major role in the health care system (Rishi, IUCN).

## **RESOURCES OF TRADITIONAL MEDICINAL IN NEPAL**

*Classical manuscripts:* Ayurveda is a system of health which is based on its basic principles, the consciousness, proto-elemental, time, space, and its evolving theories concepts. It has deep history in taxonomical, pharmacokinetic, pharmacological, and clinical studies of drugs and the findings are used for the detailed study of individual constitution, pathological states, disease conditions, drugs, formulations, forms, and dosages. Therefore, these manuscripts are not merely documents of individual records, but they provide widespread theoretical foundation and explanation. There are nearly 4000 copies of hand written manuscripts that exist. These manuscripts are written on leaf, bark and hand made papers. The languages are *Sanskrit, Pali, Newari, Nepali* and other local

languages, and are also recorded in *Tibetan* language. The contents of these manuscripts are concerned with plants, flowers, food, animals, cosmetics, minerals, tantric, basic principles, life conducts, diseases, yoga, rituals, environment, astrology, crystals, Ayurveda philosophy and more. These authentic manuscripts are the real wealth of this country.

*Traditional Practitioners/Healers their knowledge, practices, concepts, innovations, technology, and recipes:* These groups of traditional practitioners are deeply rooted in the culture of Ayurveda. They have aspired to reach the cultural values, norms, and respect of the people. They are readily available and work as a member of close relatives or family members. They are capable of managing a diversity of health problems with locally available resources. They are the repository of this culture and science, and are the wealth of the nation. A large number of the population still depends upon these practitioners. Traditional and indigenous knowledge has been used for centuries by indigenous and local communities under local laws, customs and traditions. Fundamentally, they follow Ayurvedic, ethno-botanical, ethno-traditional, *tantrik*, spiritual and *Amchi* knowledge. This knowledge has been transmitted and evolved from generation to generation. The estimated number of these practitioners in Nepal is 400,000. Although they are not included in the official system of health care as a health practitioner, their role is highly important. Some of them who are currently practicing are the 23rd generation of practitioners in their family. This generation to generation practice is handed down through the family and also through master-disciple tradition. In a survey done by consultants, it was found that there were four hundred and fifty five traditional practitioners identified and interviewed. They were from 142 villages of six Village Development Councils of the Gorkha district of Nepal. Most of the practitioners were familiar with the knowledge passed down through generations.

## **HERBAL RESOURCES**

Herbal resources are other form of Ayurvedic wealth. The geographical structure and advanced bio-diversity has made it possible for the Himalayan country to grow different valuable medicinal plants. The Medicinal and Aromatic database of Nepal covers 1624 species of plants found in wild state or cultivated or naturalized or imported belonging to 938 genera and 218 families. These are known to be used as medicine in Nepal.

As described in Ayurveda, the Himalayan **Jadibuti** are used for healthy body and happy mind. These are used in different means such as toiletries and cosmetics; incense and aromas; health promoting agents, supplements and medicines; natural manures, pesticides; environmental cleaning and protection; food, food additives and drinks etc.

Protection and preservation, development and commercialization of indigenous knowledge and herbal resources have become an issue. Herbal resources have been over exploited as usual and indigenous knowledge either humiliated or under threat of piracy. It has been estimated that four out of five medicinal plants utilized by human beings are collected currently from the wild. Since herbal resources are one of the most reliable sources of income for a majority of the people living in rural areas, competition for harvest begins before the right season.

Locals do not have scientific knowledge or technology and tools to harvest. Probability of regeneration, therefore, becomes lesser by the year and finally reaches extinction. There are two urgent steps required to check this: First, the local people who rely on such natural resources for their lives must be trained; second, encourage them to cultivate these herbs commercially. Research has found that due to change in socio-psychological factors and educational patterns, the present generations of traditional healers do not follow the old methods. This is a threat to indigenous knowledge (Bhupendra, THT, 2004 June 22)

## **INSTITUTION/ORGANIZATION OF AYURVEDA/TM IN NEPAL**

The institution of Ayurveda is the first health service provider as well as academic health technician-producing institute, whose inception was before the arrival of modern medicine. However, the century old heritage is running at tortoise pace due to extreme lack of responsible and accountable organizations/institutions for preservation, promotion, and development of this sector. They are unable to capitalize on this resource, even in the least amount.

*Ministry of Health:* Ministry of Health has already set up a focal unit – *Ayurveda & Alternative Medicine Section* which is responsible to develop necessary planning, policies, rules and regulations regarding all kinds of traditional medicine existing in country and play vital role in corporation, coordination, direction and monitoring and other organization related to TM under the ministry. The following organizations/ institutions are working currently under the ministry.

*Department of Ayurveda:* This Department is under the Ministry of Health who looks after government networks of Ayurveda and policy and planning. The constraints of manpower, visionary leadership, budgetary allocation, prioritization of activities, and lack of activity monitoring matrixes have been realized recently for the development of this sector.

*Ayurveda Hospitals:* Two Ayurveda hospitals – one in Kathmandu with hundred beds (Nardevi Ayurveda Ausadhalaya under Ayurveda Ayusadhalaya Development Committee), and a regional hospital with 30 beds (more 10 beds with cabins in internal resources) are running in Dang.

*District Ayurveda Health Centers:* 61

*Zonal Ayurveda Dispensaries:* 14

*Local Ayurveda Dispensaries:* 216

*Council of Ayurvedic Medicine:* Apex body to control, monitor and regulate Ayurveda professional and traditional healers and academic institutions. Following three categories of professional has been registered in the council:

*Ayurveda Physicians:* Graduates are registered as a full fledged member of the council.

*Ayurveda Para-medicals* are registered under a sub-committee of the council.

*Traditional Ayurveda practitioners* are enrolled and licensed for their practice. For this that is having three generations of practicing of Ayurveda and at least minimum of 50 years age groups (deadline is for one year) are eligible for enrolling. Due to this limitation, many other traditional healers

are not able to get enrollment for licensing practice. The discussion is going on amending this clause and incorporate training component to upgrade their knowledge and bring them into the main stream.

*Academic Institutions:* The first formal technical education started in the country was in Ayurveda. In 1928 AD *Nepal Rajakiya Ayurveda Vidyalaya* was started in Naradevi, Kathmandu for the production of Ayurveda manpower i.e. *Vaidyas* of all levels up to *Acharya*, equivalent to a Bachelor of the present day standards in contrast to the technical education in the modern system. In spite of the fact that Ayurveda is traditional and that formal education began much earlier than arrival of the modern medical system, since the advent of “democracy” in 1950, the emphasis and all out efforts has been on the modernization and expansion of modern health services. Ayurveda Campus TU is the continuing institute of *Ayurveda Vidhyalaya*. Other training Institutes under Mahendra S. University and CTEVT in the periphery are running. At present, one graduate level Ayurveda College, seven three-years- course educational institutions, and three fifteen-month training institutions are running legally throughout the country.

*Ayurveda Pharmaceutical Sector:* There is one government owned producing unit, *Singha Durbar Baidhyakhana Vikas Samiti* (started from Malla dynasty 357 years ago with a high reputation in its history) running below capacity and constraints of quality measures. There are 32 other private Ayurveda pharmaceutical companies, with limited capacity and some of them are not functioning all of the time.

*National Ayurveda Research & Training Centre:* Governments of Nepal & China have signed recently for the establishment of this institute and this is a recent development in Ayurveda sector in Nepal.

*Other:* There are a significant number of institutions - Public, Development Partners’, I/NGO and Private Organizations and Institutions involved in Medicinal plants including NTFPT - involved in this sector. There is minimal coordination within the Ayurvedic sector, which is very important and vital for the overall development of the country and Intellectual property rights issues.

Status of traditional medicine: A glance

System	Ayurveda	Homeopathy	Other
<b>Manpower</b>			
Graduated/post graduated	239	3 (associated with government hospital, no authentic record available of private practitioners)	
Certificate level (equivalent)	754	-	
Training (15 months)	308	-	
Traditional Healers	Nearly two dozens traditional healers have been registered to legalize their practices.		

<b>Educational Institutions</b>			
Graduate Level	1 (state-owned)	1 (recently established by private sector)	
Certificate level	7 ( 6 by private sector)	-	
Training	3 (private sector)	-	
<b>Health Services (all state-run)</b>			
Central Level	1	1	
Regional	1	-	
Zonal	14	-	
District Level	61	-	
Dispensaries	216	-	
<b>Manufacturing companies</b>			
State-run	1 (Singh Durbar Vaidya Khana)		
Private	Around 30 (No reliable data is available)		

### **AYURVEDA HEALTH POLICY (AHP) 2052: BACKBONE OF THE DEVELOPMENT OF AYURVEDA\***

For the accomplishment of the objectives identified by the National Health Policy, 2048 (1992), the specialty of Ayurvedic treatment which has been preserving health and curing diseases from ancient times is timely. Its principal objectives is to improve health condition of mass people and make them self-reliant on health service by officially and mostly utilizing local medicinal herbs and medical entities which are easily available and can be used.

Some key features of AHP:

***Provision of Inter institutional and People's participation:***4.1 Health workers, wizards, women volunteers, birth attendants, workers of social organization, who are providing medical service by way of herbs in a traditional manner in rural areas will be provided with trainings of growth, promotion, collection, protection and use of herbs, and people's participation will be mobilized in the Ayurvedic treatment service.

***Encourage Herbs farming, production and enterprise of medicines:*** Qualitative business of herbs will be encouraged by developing model herbs farms in Himalaya, Mountainous and Terai regions and providing the people with knowledge on the use of the herbs in domestic treatment and their preparation, protection and promotion.

Co-ordination will be made with governmental and non-governmental associations related with the herbals, so as to maintain standard in domestic trade and export to foreign countries by identifying genuine herbals.

Governmental and non-governmental Ayurvedic medicine manufacturing companies established or to be established in the country will be encouraged to manufacture qualitative medicines on the basis of 'Good Manufacturing Practice'

\* Translated by Dr Shyam Mani Adhikari, Ministry of Health Nepal, available at: [www.ayurvepal.com](http://www.ayurvepal.com)

and imports will be reduced and export promoted.

**Ensure Ayurvedic education and manpower development:** Taking into consideration of paramount role of qualified, efficient and duty-bond manpower in the technical field like treatment, a National Ayurvedic Institute, equipped with necessary equipments as well as a research centre, will be established under Tribhuvan University, for enhancing and carrying on further development in effective production of Ayurvedic manpower carrying out functions being dedicated to the field of Ayurveda and in standard of quality of its various dimensions (education, health, and preparation of medicines).

Similarly, Programme of producing bachelor-level manpower in Ayurveda will be conducted so that physical infrastructure will be developed in harmony with the objective to provide master level and P.H.D. level Ayurvedic education in the future.

**Management of Ayurvedic Manpower:** Various organizational structures under the Ayurveda Group will be made responsive and service-oriented for consolidation of management aspect of Ayurvedic manpower. Ayurvedic doctors and Ayurvedic health workers will be provided with the same allowances and special facilities as doctors or health workers of other systems are receiving or will receive.

**Ayurvedic Research:** there will be established an Ayurvedic Research Institute furnished with the required equipment, for research of international standard in matters related with the use of Ayurvedic medicines and entities and the Ayurvedic treatment.

**Provision of Resource Mobilization:** Assistance of native and foreign donor agencies will be made available so as to provide financial support to various programmes of Ayurveda, to mobilize the acquired financial source by promoting export of herbs and prepared medicines and to assist in the implementation of the said programme.

**Nepal Ayurvedic Medicine Council:** Establishment of Nepal Ayurveda Medical Council in national level for fixing necessary standards of Ayurvedic education and service, registration of doctors, well arrangement of fixation, monitoring and evaluation of their jurisdiction.

**Achievements of the formulated policy:** Concisely, For the sake of development of Ayurveda manpower as well as education, several objectives are resplendently designed in AHP (Ayurveda Health Policy)-1995 realizing global demand and future of Ayurveda. Educational institutions to produce graduate, post-graduate and PhD level; National Ayurveda Study Center for quality service, management of manpower, research on Ayurveda and resource management; etc are the major objective. However even after a decade of policy promulgation, there is no significant progress observed except the establishment of Nepal Ayurvedic Medical Council (Bhupendra TKP, 18<sup>th</sup> Nov, 2006).

## **LEGAL STATUS AND REGULARITY SITUATION**

The use of medicinal herbs in Nepal's traditional medical system dates back to at least 500 AD. In Nepal, traditional medicine, although low profile, has been an integral part of the national health system. Parallel to the allopathic system, traditional medicine is encouraged in all spheres because of its efficacy, availability, safety, and affordability when compared to allopathic drugs

The policy of the Government, based on five-year plans, involves a system of integrated health services in which both allopathic and Ayurvedic medicine is practiced. Ayurvedic clinics are considered to be part of the basic health services, and there is a section responsible for Ayurvedic medicine in the Office of the Director General of Health Services. The programmes for health services included in the Fifth Five-Year Plan make provision for four Ayurvedic hospitals, one in each of the four development regions. The Ayurvedic Governmental Pharmaceutical Unit works to provide inexpensive medicaments.

The Ayurvedic Medical Council was created through legislation passed in 1988. Section 2.1 of this Act gives the Council's mandate as, among other things, steering the Ayurvedic medical system efficiently and registering suitably qualified physicians to practice Ayurvedic medicine. In Section 4, the legislation sets out highly detailed provisions for registration that classify applicant practitioners into four groups according to their qualifications and experience in Ayurvedic science. By Section 5.2.2, membership in a particular group fixes the range of Ayurvedic medicines that a practitioner is permitted to prescribe. Registered practitioners enjoy a monopoly over the practice of Ayurvedic medicine: direct or indirect practice of Ayurvedic medicine by other medical practitioners is forbidden by Section 5.1.1. Section 5 of the Act enables registered Ayurvedic practitioners to issue birth and death certificates as well as certificates concerning the Ayurvedic medical system and patients' physical and mental fitness (WHO).

## **FOR THE BETTER FUTURE OF TRADITIONAL MEDICINE**

Immediate step need to capture, protect, and commercial exploit the natural resources, medicinal plants, Traditional Medicine and their related intellectual property rights for the overall sustainable growth and development. For this following actions are important and Nepal is far behind in this process.

1. *Documentation*
2. *Information Dissemination:*
3. *Training:*
4. *Research and Development:*
5. *Intellectual Property Right and benefit sharing:*
6. *Exchange programs for students and professionals:*
7. *Exchange of science and technology:*

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# **SALIENT FEATURES OF TRADITIONAL MEDICINE IN SRI LANKA**

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## **I. ANCIENT PERIOD OF TRADITIONAL MEDICINE IN SRI LANKA**

The medical practice in Sri Lanka (Fig 1) has long tradition with its roots tracing back to pre-Ariyan civilization. The earliest system of medicine functioned before the establishment of Ayurveda, is indigenous system of medicine in Sri Lanka.

The earliest references of indigenous system of medicine are associated with Rawana a king of Sri Lanka dating back to the prehistoric times who was himself a great physician

It is traditionally believed that the king Rawana who was believed to be the author of several books on medicine. eg: Arkaprakashya, Nadivignana etc. It is said that he represented Sri Lanka at a medical conference which held in India during King Rawanas period. This is the basement of the indigenous medical system in Sri Lanka.

The ancient Sri Lanka was devout follower of Buddhism. They gave the highest priority for the provision of medical facilities to the people. The ideology of Buddhism would have influenced to the indigenous system of medicine in Sri Lanka.

The archaeological findings reveal that the standards of health services maintained in the past was highly commendable and was in keeping with modern concepts of primary health care.

The *Mahavansa*, the great chronicle refers to several kings who established hospitals, specialized hospitals and convalescent homes and maternity homes. Following are the great examples in great chronicle Mahavansa:

King Devanampiyathissa (247-207 BC) Built Mihintale hospital, King Pandukabhaya Hospital was constructed to the north of the wall city of Anuradhapura, "Nagaraguttika" was appointed as a responsible officer for sanitation and public health according to health plan system.

King parakramabahu I eminent physician - Different physician were employed in his administration named "Mahavedana" (chief physician) and "Suluvedana" (physician)

King Dutugamunu (1<sup>st</sup> century B.C.), Great care of the sick and has bestowed on them their food and medicaments. King Udaya I (792-797A.D.), Built a large hall for the benefit of the sick in Pulathinagara (Polonnaruwa) and other hall at place called "Padvi", He also put up halls for the crippled and blind

King Kassapa IV (896-913 A.D.), Built hospitals both at Anuradhapura and Plonnaruwa to combat an epidemic of diseases called “Uppassaga”, Built houses where medicine was to be had in different parts of town. (Can be considered as dispensaries or chemist houses)

## II. PRACTICE OF TRADITIONAL MEDICINE IN SRI LANKA

This can be classified broadly under two categories. They are indigenous medicine and Ayurveda medicine. Ayurveda is practiced in the form of all its components, Ayurveda, Siddha and Unani and Indigenous system of medicine. Ayurveda and Siddha system were gifted to us from India along with several waves of culture that passed over to Sri Lanka. The Unani system is variable, has left its imprints here through the Arabs who came for the purpose of trade.

According to section 89 of Ayurveda act No.31 of 1961 “Ayurveda includes the Siddha and Unani and Deshiya chikitsa (Indigenous medicine) system of medicine. Out of these four systems Ayurveda system remains dominant.

Practice of Traditional medicine in Sri Lanka	
Deshiya chikitsa	Ayurvedic medical system
Buddhist practices	Unani medical system
Occult practices	Siddha medical system

What is designated as Indigenous system of medicine (Deshiya chikitsa) was originated in Sri Lanka probably during the pre historic time and expanded and developed independently on its own way. It is practiced mainly as a traditional process. It was always inherited by the son from the father.

Therefore it was guarded and preserved as a family heirloom. For the same reason there is a high degree of specialization in certain areas. The specializations in special fields in Indigenous medicine are referred to as *Paramparika vedakarma* (Traditional treatment) such as:

- Esvedakama (Ophthalmology)
- Gedivedakama (Treatment of boils and carbuncle)
- Sarpavisha vedakama (Toxicology)
- Pissubalu vedakama (Hydrophobia treatment)
- Vidum pilissum vedakama (Similar to Acupuncture)
- Kadum bindum vedakama (Treatment of fractures and dislocations)
- Unmada chikitsa (psychology)

Meanwhile occult practices such as worshiping demons with charming (Bali Thovil) is also practicing in Sri Lanka. These treatments are basically targeted for psychological conditions.

### **III. EDUCATION OF INDIGENOUS MEDICINE IN SRI LANKA**

Education of Indigenous medicine can be implemented on the following basis:

- Gurukula Sampradaya
- Pirivena Adyapanaya
- Education in Private Ayurvedic colleges
- Education in Government Ayurvedic colleges
- Education Institutes affiliated Universities

In broad basis it can be categorized as:

- Training of traditional physicians
- Institutional training affiliated Universities

Realizing the need to ensure the academic standards and to bring traditional medicine in to line with higher medical education in Sri Lanka, the institutional training was established.

During the invasion of western nationalities with introduction of their culture, western medicine and well organized education system had a crushing impact on these traditional medical systems. But somehow patriots who lived in early 1900, such as Advocate Donald Obeskara had formed Ceylon Social Reform Society. This society gave the birth to the oriental medical science fund, which provided the Ayurvedic medical studies for five selected Sri Lankan candidates in India on scholarships basis. This laid the ground for the present development of Sri Lankan traditional medical system.

This Oriental Medical Science Fund also founded the Colombo indigenous medical college with an Ayurveda hospital in 1929 with the collaboration of the government. This Colombo indigenous medical college presently known as Institute of Indigenous Medicine is affiliated to University of Colombo.

This Institute, with well qualified teaching staff including Professors and Ph.D scholars, Master degree scholars (MD/Ms/MSc./Mphil.), is the one and only Government University, which provides undergraduate and postgraduate courses for three major traditional medical systems.

Courses conduct by Institute of Indigenous Medicine, University of Colombo

Undergraduate courses

- B.A.M.S. (Bachelor of Ayurvedic Medicine and Surgery)
- B.U.M.S. (Bachelor of Unani Medicine and Surgery)

Post graduate courses

- M.Phil in Ayurveda (Master of Philosophy)
- M.Phil in Unani (Master of Philosophy)
- PG.Dip. in Ayurveda (Post Graduate Diploma)

- PG.Dip. in Unani (Post Graduate Diploma)
- Parallel to this Institute, Gampaha Wickramaarachi Ayurveda Institute was founded by Dr. G.P. Wickramaarachchi and now it is affiliated to University of Kelaniya offering Degree programs.

Apart from Ayurveda and Unani Medicine, college of Siddha Medicine was established in 1925 which is now affiliated to University of Jaffna. It offers the degree of Siddha medicine

#### **IV. AYURVEDIC HOSPITALS**

Ayurvedic teaching Hospital for Institute of Indigenous Medicine, University of Colombo, is known as the National Ayurvedic Teaching Hospital, which has a well qualified staff:

Ayurveda, Unani and Siddha physicians

- Visiting consultants
- Specialists
- House officers
- Traditional Medical Practitioners

Para Medical Services

- Nurses
- Medical Laboratory Technicians
- Radiographers
- Pharmacists
- Minor staff (health workers)

Well qualified staff caters two major categories of patients:

- Indoor Patients Department
- Outdoor Patient Department

Indoor Patients Department can accommodate well over three hundred patients including paying ward, surgery ward, Paediatric ward, Gynaecology ward, Panchakarma and Clergy wards. Outdoor Patient Department treats between 750 to 1000 patients per day with specialized clinics such as Gynaecology, Surgery, E.N.T., Burns, etc.

Apart from National Ayurvedic Teaching Hospital there are so many Ayurvedic hospitals are governed by the government, including Central Dispensaries, District Hospitals, and Free Ayurveda dispensaries. All together there are about 50 Ayurvedic hospitals are in the island.

#### **V. RESEARCH AND DEVELOPMENT INSTITUTES OF INDIGENOUS MEDICAL SYSTEM**

There are two main institutes are established for develop research and to improve quality of Indigenous Medical system.

- B.M.A.R.I (Bandaranayake Memorial Ayurveda Research Institute) - established in 1962

- N.I.T.M. (national institute for Traditional Medicine) –established in 1991

## **VI. SRI LANKA AYURVEDIC DRUG COOPERATION**

A corporation had been established by the government of Sri Lanka for the production of traditional medicaments. It was established in 1969 under the industrial corporation Act No.49 to 1957 by then Minister of Industries and Fisheries.

Corporation is headed by a chairman and general manager. The main objectives of the Sri Lanka Ayurvedic drug corporation (SLADC) are:

- To carry out the business of manufacture, sale and distribution of Ayurvedic drugs and pharmaceuticals and Ayurvedic medicinal preparations.
- Import of Ayurveda, Siddha and Unani drugs (both raw and manufacture drugs), sale and distribution of these drugs.
- To perform pharmacological and pharmaceutical research in Ayurvedic drugs.

## **VII. DRUG RESEARCH AND HERBAL GARDENS**

There are five drug research centres and ten herbal (medicinal) gardens under the Ministry of Indigenous Medicine.

## **VIII. ADMINISTRATIVE FRAMEWORK IN INDIGENOUS MEDICAL SYSTEM IN SRI LANKA**

There are five statutory bodies functioning in the indigenous medical system in Sri Lanka.

- Ministry of Indigenous Medicine
- Department of Ayurveda
- Ayurveda Medical Council
- Ayurveda Education and Hospital board
- Ayurvedic Research Committee

### Ministry of Indigenous Medicine

Government of Sri Lanka expressed official support by creating a separate ministry of Indigenous Medicine in 1980. In 1980, a new project “Ministry of Indigenous Medicine” was formed and reputed Ayurveda physician was appointed as the Minister.

The subject and functions pertaining to Ayurveda were under the Ministry of Health. Sri Lanka Ayurvedic Drug Corporation and the B.M.A.R.I (Bandaranayake Memorial Ayurveda Research Institute) and the three statutory bodies created under the Ayurvedic act comes within the purview of the Health Ministry.

### Department of Ayurveda

This executes some of the functions assigned to it through its own administrative

net work. The rest of functions are governed by the three statutory committees.

- Ayurveda Formulary committee
- Research Institution
- Training institution

#### Ayurveda Medical Council

The Ayurveda Act No.31 of 1961 provides an Ayurvedic Medical council, which is responsible for the registration of practitioners, Ayurvedic Pharmacists, Ayurveda nurses and for regulations for their professional conduct.

The registration of Ayurvedic physicians falls in two broad categories:

- The physicians who obtain the medical qualification are recognized by the Ayurvedic Medical council
- Registration of traditional physicians

Physicians are registered either as general practitioner or as “special physicians”. The rules and regulations of the professional conduct of Ayurvedic physicians have been gazetted and the professional conduct rules 1971 were issued by Ayurvedic Medical Council and approved by the Minister of health (made under section 18 of Act).

#### Ayurveda Education and Hospital Board

There is provision to setup an Ayurvedic Education and hospital under section 22(1) of the Ayurveda Act No 31 of 1961 as amended by the Ayurveda law No 7 of 1977.

It was to form Ayurvedic college and hospital board. Management of the college of Ayurvedic medicine was one of the functions of the main board but with the affiliation of college to the Colombo University, the board was relieved of this responsibility.

This board has authority to determine the course of instruction to be given to the Department of Ayurveda to hold medical examination work of Ayurvedic teaching hospital.

#### Ayurvadic Research committee

This act provides for the setting up of an Ayurvedic Research Committee. One of the duties of the committee is to advice the minister concerning the research of all branches of Ayurveda, such as Ayurvedic literature, fundamentals in Ayurvedic doctrine, clinical treatment, Ayurvedic drugs, Pharmacology and pharmacopoeia.

### **VIII. CURRENT SITUATION OF INDIGENOUS MEDICINE**

Currently Ayurvedic Medicine and health care methods are becoming more popular among western people. Ayurvedic concepts and resources are well utilized

to fulfill the high demand of those people. Today Ayurvedic hotels, resorts and spas have paid their attention not only to treat the patients with Ayurvedic medicine, but to carry out many treatments that help to increase the immunity, to prevent from future diseases. During the colonial period, invasion of western Medicine and some rules banning Ayurvedic practices deteriorated the system of Ayurveda. Presently because of scientific researches Ayurvedic practitioners have been able to prove the strength of Ayurvedic theories and practice. With international recognition especially from the World Health Organization (WHO), Ayurveda has now been flourishing all over the world.

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**TRADITIONAL MEDICINE IN BHUTAN**  
**DORJI WANGCHUK, DIRECTOR, INSTITUTE OF TRADITIONAL**  
**MEDICINE SERVICES, BHUTAN<sup>12</sup>**

**INTRODUCTION**

Bhutan is known as *Menjong Gyalkhab* meaning the land of medicinal plants. Above the Indian plains, the country gradually rises from the luxurious jungle of the foothills, about 150 meters above sea level to the solitude of the snow-capped peaks culminating at more than 7500 meters above sea level.

The small Himalayan kingdom of Bhutan is situated between India and China and is totally landlocked. The country has a forest cover of over 72% attributing to the presence of a rich biological diversity. These forests are home to several endangered species of flora and fauna harbouring over 7000 species of plant, 165 species of mammals and 700 species of birds. Apart from its rich biodiversity and natural resources, Bhutan has a rich cultural heritage which is still characterised by a certain amount of traditional features like traditional medicine.

This difference in altitude, bringing almost tropical vegetation right to the base of glaciers, has made it possible for plants of extremely different climatic and environmental conditions to grow in the same country.

Tropical and subtropical forests are found in the South. Temperate and even Mediterranean plants flourish in the valleys, and very rare specimens grow up to 5000 meters. To date, more than 600 medicinal plants have been identified in Bhutan, and at least 300 of these are commonly used by practitioners in the country for preparing medicines.

The Bhutanese traditional medical system goes well beyond the notion of medicine in the narrow Western sense. It forms part of a whole by blending, culture and tradition, in which Buddhism is the prevailing influence. Health and spirituality are inseparable and together they reveal the true origins of any sickness. The art of healing is therefore a dimension of the sacred.

**DEVELOPMENT OF TRADITIONAL MEDICAL SERVICES**

In November 1967, the third Druk Gyalpo, His Majesty King Jigme Dorji Wangchuk commanded the Health Department to establish traditional medicine system for the welfare of Bhutanese people and to preserve its rich culture and tradition. Accordingly, an Indigenous Dispensary was opened on 28th June 1968 at Dechencholing, Thimphu. The first persons to work in the Dispensary were Drungtsho Pema Dorji and Drungtsho Sherub Jorden, both of whom were trained in Tibet.

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<sup>12</sup> Based on powerpoint presentation made by Dr Wangchuk during the conference; Part of the paper is taken from “An Introduction to Traditional Medicine Services in Bhutan”, Institute of Traditional Medicine Services, Ministry of Health, Royal Government of Bhutan, Thimpu, 2005.

From a single Indigenous Dispensary in 1968, the traditional medical service has grown rapidly over the years to cover the entire country. By the end of 8th five year plan (2001) traditional medicine units have been established in all 20 districts. They are attached to district hospitals in view of the national health policy of integration.

At the national level the Indigenous Dispensary was upgraded to National Indigenous Hospital in 1979 and shifted to the present site in Kawang Jangsa from Dechencholing. The National Indigenous Hospital was renamed as the National Institute of Traditional Medicine (NITM) in 1988. In view of the increased functions, the NITM has been upgraded as the Institute of Traditional Medicine Services (ITMS) in 1998 and the post of Director was created. There are three functional units under the ITMS as follows:

**1. National Traditional Medicine Hospital** is responsible for the development and provision of quality traditional medical care including different therapies. It is headed by the Superintendent and there are 8 Drungtshos (traditional medicine doctors) working in this hospital.

**2. National Institute of Traditional Medicine** is headed by the Principal and is responsible for development of human resources required for the traditional medicine services. Five Drungtshos are working in the Institute as lecturers.

**3. Pharmaceutical and Research Unit** is responsible for the manufacturing and production of medicines, conducting quality control for both raw materials and finished products, carrying out research activities and marketing of the products. The unit is headed by a Pharmacist.

#### **INSTITUTIONAL MILESTONES**

1967 - Establishment of Indigenous Dispensary  
1971- Started training of Menpas  
1978- Started training of Drungtshos  
1979- Upgraded to National Indigenous Hospital  
1982- Mechanized production unit - WHO  
1988- Renamed as National Institute of Traditional Medicine  
1993- The post of Director was created for the Institute  
1996- Instituted Revolving Fund to ensure sustainability  
1997- Upgraded the production unit and renamed as  
Pharmaceutical and Research Unit – EC  
1997- Establishment of drying Centre at Lingshi  
1998- Upgraded as Institute of Traditional Medicine Services  
1999- Establishment of drying Centre at Langthel  
2001- Completed establishment of TM Units in all 20 districts  
2003- Establishment of TM Units at BHU level

**The main aims and objectives of ITMS** are to:

- Promote traditional system of medicine in the country

- Preserve the unique culture and tradition related medical practices
- Provide alternative medicine as complementary to the allopathic system
- Produce medicines required by the traditional medical system
- Conduct research and quality control of drugs
- Develop human resources required for the traditional medical system
- Achieve excellence in traditional medical services in Bhutan.

## **HISTORICAL BACKGROUND**

It is believed that at the beginning of time, the art of healing was a prerogative of the gods, and it was not until Kashiraja Dewadas, an ancient Indian King, went to heaven to learn medicine from them, that it could be offered to man as a means to fight suffering. He taught his progeny the principles and the practice of healing, and this knowledge was spread and perpetuated as an oral tradition until the lord Buddha appeared and gave specific written teachings on medicine. These were recorded in Sanskrit and became part of early Buddhist sacred writings.

When Guru Rimpoche first brought Buddhism into Tibet in the eighth century, some of these medicinal texts were translated into the Tibetan language, and enlightened rulers of that country became interested in the subject. They started promoting the development of the art of healing, by organizing meeting on medicine to which they invited healers not only from the whole of Tibet and surrounding Himalayan countries, but also from China, India, and the Muslim world.

It is reported that during those conferences, all the different medical systems were examined and the best practices adopted and incorporated into the newly born *gSo-ba Rig-pa*, which was then handed down from one generation to the next. The tradition of *gSo-ba Rig-pa* began at the time of great Tibetan doctors including Gyuthog “the Elder” in the eighth century, and one of his descendants, Gyuthog “the Younger” who lived in the eleventh century. The latter made a notable contribution in spreading the celebrated *Gyu’shi* or “Four Medical Tantras” and its commentary, the *Vaidurya Ngonpo*.

**Sources of gSo-ba Rig-pa Tradition.** Though it took shape in Tibet, this medical tradition, which is still practiced in Bhutan, has always been characterized by the diversity of its origins. It is based in Indian and Chinese traditions and has also incorporated ancient medical practices connected with magic and religion. However, in essence, it is based on the great principles of Buddhism and provides a comprehensive way of understanding the universe, man and his sicknesses.

These two great systems of thought inspired Bhutanese traditional medicine, but there were also local influences. In many ancient accounts, sickness is usually attributed to demonic causes. Local gods, demons and spirits of all kinds could be considered as responsible for certain illnesses. To obtain healing, it was necessary to practice particular rituals and only monks or magicians were in a position to do so. This medical practice thus involved much divination the means of diagnosing and recognizing the spells causing the illness and exorcism as the way of treating the patient. And even though medical techniques in Tibet and Bhutan developed

subsequently observations, experience, study and knowledge, popular beliefs and a definite influence in the way traditional medicine evolved.

Over and above these various influences, Buddhism itself is at the heart of Bhutanese medical traditions. Buddhism teaches that the existence of phenomena and suffering (sickness, old age and death) have a single origin that prevents man from reaching enlightenment, namely ignorance. This is the origin of the three mortal poisons, desire, aggressiveness, and mental darkness. In turn these three mortal poisons will produce the three pathogenic agents – air, bile and phlegm, which are the origin of sickness. With its overall conception of the universe and life, Buddhism is thus a way of linking medical theory to the same single source, in which sickness finds its natural place. Only knowledge, leading to Enlightenment, can free mankind from this painful existence.

It was only after reaching enlightenment and understanding of the ties binding man to this world and the means of freeing himself from them that Buddha could define the origin of pain, discover the way to eliminate it and teach an effective theory. It is therefore not surprising that he become the most outstanding healer. Through his own experience he discovered the art of healing old age, sickness and death. The divinity of medicine, Sangye Menlha, is represented in traditional iconography with a blue body. His right hand holds our the Terminalia Chebula (Aru), which is believed to cure all illnesses, as a gift. In his left hand is a bowl of ambrosia, the elixir of immortality.

**gSo-ba Rig-pa in Bhutan and Physicians of this Century** When Shabdrung Ngawang Namgyal came to Bhutan in 1616, his Minister of Religion, Tenzing Drukda, who was an esteemed physician, started the spread and teaching of gSo-ba Rig-pa. Although there were sporadic instances of Bhutanese being sent by their patrons to study this art in Tibet before then, it was only after 1616 that gSo-ba Rig-pa was established permanently in Bhutan.

Since then, the Bhutanese tradition of gSo-ba Rig-pa has developed independently of its Tibetan origins and although the basic texts used are the same, some differences in practice make it a tradition particular to the country. The specific knowledge and experience gained by the Bhutanese over the centuries are still very much alive in this medical tradition. The natural environment, with its exceptionally rich flora, also enabled the development of a pharmacopoeia which is very unique in the world.

The names of many Bhutanese traditional doctors of the past who excelled in their skills have remained alive in the memory of the people long after their death. Unfortunately, very little is known of the traditional doctors who practiced in Bhutan from the time of Shabdrung Ngawang Namgyal to the time of the Wangchuck dynasty. However, according to Druk Karpo by Lopon Nado, published in 1986 at Tharpaling Monastery Bumthang, the following names were mentioned as responsible for the development of gSo-ba Rig-pa in Bhutan during that period. They were: Lopon Tshering Samdrup, Ngawang Dhargyal, Chang Gyeltshen and Lopn Tshewang Namgyal.

His Majesty Ugyen Wangchuck, the first King of this dynasty, had at his court a personal physician called Drungtsho Pemba, who was the descendant of a family

of traditional doctors and whose father, Drungtsho Gyeltshen, was said to have been the personal physician to the first King's father, Jigme Namgyal. Drungtsho Gyeltshen was born near Tongsa and was trained in Tibet in the famous Lhasa Medical School of Chagpori. Duntsho Pemba's son, Duntsho Penjore, who also studied at Chagpori, acquired the fame of being the best doctor in the family and was called to serve at the court of His Majesty Jigme Wangchuck, the second King of Bhutan. According to some accounts, Duntsho Penjore, was very close to the second King and a very good archer. The above-mentioned physicians used to send raw materials to Tibet and received the prepared drugs from Chagpori. They apparently never manufactured the medicines.

Another Bhutanese physician at the court of the second King was Mahaguru, the former Gangtey Trulku's physician. Mahaguru himself was from Gangtey Gumpa and trained as a doctor there. He was a very saintly man as well as a good doctor, prepared his own medicines whenever he needed to prescribe them to his patients. On His Majesty's orders, he was provided with regular rations from Wangdi Phodrang Dzong. At the age of seventy eight he predicted and publicly announced the time and place of his death. His son stated that he died quietly and painlessly as predicted. People estimated that he died at the age of 100.

In the first half of the twentieth century, another famous physician was Duntsho Chimi Gyeltshen. He was born in Mongar and when he turned twenty, he went to Tibet to study medicine at Chagpori. After staying there for sixteen years, during which he rose to the highest rank for a traditional physician, he came back to Bhutan at the bidding of Ashi Kenchock Wangmo, the second King's younger sister, and settled near Kurtoe. Drungtsho Chime Gyeltshen died in Lhuntshi in 1966.

Druntscho Singye Namgyal from Bumthang Lamay Goenpa studied medicine from Druntsho Pema Namgyal in Tshurpu, western Tibet. He came back to Bhutan and practiced privately till 1983. After that he was appointed as Physician at Bumthang Hospital by the Health Department.

## **NATIONAL POLICY**

The National policy for Traditional Medicine is to preserve and promote the unique system of medicine that is based on rich culture and tradition, through capacity building and establishing an effective system within the framework of national health care delivery system.

## **BHUTAN 2020**

A Vision for Peace, Prosperity and Happiness states the importance of Traditional Medicine as follows. "We must continue to provide a place for traditional medicine in our system of health care. Traditional medicine embodies knowledge that has been accumulated over centuries and which draws upon the nation's rich biodiversity and of plants with proven medical qualities. As these qualities become substantiated by scientific research, there is a growing need to integrate more effectively traditional medicine with the modern system of health care. The maintenance of traditional medicine not only adds dimensions to the nation's system of health care, but provides an alternative for those who seek one. It should

also be regarded as a conscious decision to conserve a part of our rich and varied cultural heritage".

Therefore, strengthening of traditional medicine and integrating it with modern health care system is considered as an important policy objective of the health sector.

### **NATIONAL TRADITIONAL MEDICINE HOSPITAL**

The traditional medical service functions as an integral part of the national healthcare delivery system. It is available in all 20 districts and is housed under the same roof of district hospital for mutual consultation, treatment and cross referrals. The system is quite popular especially amongst the older population and treats about 20-30% of the daily OPD patients in the district hospitals. The national hospital in Thimphu treats about 200 – 250 patients per day in summer and about 150 to 200 patients in winter.

The National Traditional Medicine Hospital provides different therapies such as Acupressure with gold and silver needles, blood letting, moxabustion, herbal bath, steam bath and application, nasal irrigation, massage with medicated oils etc. At the district TM units, only acupressure with gold and silver needle is provided.

The traditional medicine is considered more effective for chronic diseases such as sinusitis, arthritis, asthma, rheumatism, liver problems, diseases related to digestive and nervous system etc.

The reason why traditional medicine is particularly good for such chronic diseases is because of its holistic, rounded and profound approach in the treatment.

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# **SITUATION OF TRADITIONAL MEDICINE IN BANGLADESH**

**FARIDA AKHTER, UBINIG – POLICY RESEARCH FOR DEVELOPMENT ALTERNATIVE, BANGLADESH<sup>13</sup>**

## **INTRODUCTION**

“Traditional Medicine” refers to health practices, approaches, knowledge and beliefs incorporating plant, animal and mineral based medicines, spiritual therapies, manual techniques and exercises, applied singularly or in combination to treat, diagnose and prevent illnesses or maintain well-being.



South Asia is historically rich for the practice of Ayurveda, Unani and Homeopathy and various local treatments that include food systems, spiritual rituals, customs, etc.

Traditional Medicine or treatment is based on traditional uses of plants, animals or their products, other natural substances (including some inorganic chemicals), religious verses, cultural practices, and

physical manipulations.

This system of medicine has been in use almost unchanged generation after generation throughout the ages for the treatment of various physical and psychological diseases, it is called traditional.

The types, preparation, and uses of traditional medicines are largely influenced by folklore customs and the cultural habits, social practices, religious beliefs and, in many cases, superstitions of the people who prescribe or use them.

## **HEALTH SERVICES IN BANGLADESH & ROLE OF TRADITIONAL MEDICINE**

(a) Modern system: based on Allopathic medicine

(b) Traditional System:

- Ayurvedic (Kabiraji)
- Unani, (Hakim)\*
- Homeopathic

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<sup>13</sup> Prepared from the powerpoint presentation made by Ms. Akhter during the conference; Part of the paper is based on “Navakrishi Andolan, Cultivating Ananda – planting seeds of joy”, by UBINIG, Shaymoli, Dhaka, Bangladesh

- Folk medicine

There are about 6,000 registered and 10,000 unregistered traditional medicine practitioners (kabiraj and Hakims)

In Bangladesh, Homeopathic, Ayurvedic and Unani medicines are officially recognised, practised as an alternative and side by side with allopathic medicine and also as supplementary system.

There are 2 dozens registered herbal pharmaceuticals in Bangladesh, of which 4 big pharmaceuticals are Sadhana, Sakhti, Kundeshwari, and Hamdard, producing 80% of traditional remedies. These are controlled by Unani and Ayurvedic Board.

Regarding the production of traditional medicines there are: Ayurvedic drugs companies: 204; Unani drugs companies: 297; Homeopathic drugs companies: 77. The annual sale of these companies (2003) is Taka 300 crores (approximately 32 million Euro). There are no formally registered Herbal medicinal pharmaceuticals, but 2 Allopathic based pharmaceutical companies are marketing 2 herbal drugs (Heptolin by ACME for liver disease and Adivas by Square for cold, cough). 40 Ayurvedic and Unani companies have applied for license to produce Herbal medicines.

## **FOLK MEDICINE**



Folk medicine is based on traditional beliefs, social cultures, with or without the use of medicinal preparations. It also includes religious and spiritual medicines.

Folk medicine is mainly based on community knowledge, expressed through experiential knowledge of the elderly people, through home-based treatments. Folk medicine is

widely practiced in Bangladesh and is part of Traditional Medicine systems.

## **CHALLENGES FOR TRADITIONAL MEDICINE IN BANGLADESH**

Countries like Bangladesh are rich in biodiversity, therefore have a rich resource of herbs, plants and trees which, in one or more of its organs, contain substances that can be used for therapeutic purposes.

Bio-prospecting, that is commercialisation of biological resources (world market of \$62 billion according to a survey in 2000) is increasing by 15% each year.

Bangladesh is so far the importer of raw materials for pharmaceuticals (annually, Taka 64 crores worth of medicinal plants). Government aims to reduce these imports. Bangladesh has at least 500 medicinal plants, 106 plant species being

listed as endangered. 80% of the people depend on herbal medicines for their primary health care and annual allocation for Traditional Medicine is 0.08% of national budget.

Bio-prospecting & commercialisation treat the products, processes and the knowledge of traditional medicine independently from the overall system. For example, plants, food systems or the fermentation process of traditional Ayurvedic system are seen as 'raw materials' to be appropriated by the modern allopathic system, as if the knowledge-value or medicinal value of the elements of the systems can be treated separately and extracted without the system within which they play the medicinal role. **(Picture: Ulot Kombol plant – *Abroma Augusta* Linn)**



The integration or appropriation of 'traditional medicine' in the mainstream health care systems implies potential danger of bio-piracy. The issue of a people-based primary health care is not integration of 'traditional medicine' in the modern' health care system but to develop a critique of all systems.

#### **UBINIG : ABOUT US**

We stand for good life for all, free from caste, class, patriarchal, economic, political or cultural hierarchies and oppression. We practice a lifestyle consistent with what we believe. Lifestyle is political.

We do not separate life from non-life, consciousness from matter. We adore life because we value the conditions that make life possible. We are against the materialists as well as idealists; the evolution or birth of self-conscious human collectives or communities occurs at the site of concrete life activities and not at the level of discourse.

We are consistently respectful to others, even our enemies; being respectful constitutes our stance of remaining self-critical without compromising on principles. We promote politics of responsibility and not the egocentric cry of "rights".

We disagree that industrial civilisation is an advance, a higher form of human history. We must regain our capacity to assess our past histories in forest, in pastors, in agrarian civilisations and in varied experiments of sustainable villages, towns and cities.

We are convinced that Industrialisation of biological world, genetic engineering or nanotechnology is the continuation of the predatory civilisation that can survive only through war, delivery of death and mass destruction.

We have no evidence that information technology advanced the truth, ensured better flow of information, strengthened analysis or nurtured wisdom. It rather

reinforced grand lies, dis-information, and propaganda to suppress the struggle of the people for equity, justice and dignity.

We are not against science and technology. We reject corporate 'science' and tools of death touted as hi-tech. We love life and would like to enjoy it without the advertisement and manipulation of the companies.

We are for the wisdom and the wise.

We are known as UBINIG; in Nayakrishi Andolon we are practising what we say and believe.

## **NAYAKRISHI ANDOLAN: NEW (AGRI)CULTURAL MOVEMENT OF BANGLADESH**

*Nayakrishi Andolon* literally means New Agricultural Movement. It is led by farming communities of Bangladesh practicing biodiversity-based ecological agriculture, but it begs some elaborations.

The word *krishi* in Bangali language means “to cultivate, engaging in agriculture”; the word *krishti* is derived from the same root implying culture or civilisation. Agriculture is indeed civilisation. Nayakrishi is about civilisation.

*Andolon* is movement -- movement at various levels: cultural, mobilisational, political and organisational. It is also a movement at the site of ideology, discourse and power. At the margins of imagination and determination, Nayakrishi is also about promise of future. But most importantly Nayakrishi Andolon is about lifestyle, it is a lifestyle movement to create new types of communities.



Nayakrishi is about agriculture, true, but not about agriculture understood in a very narrow sense, as a sector of production. It is not about some kind of 'factories' in the field outside urban centres and cities, implanted in farming households supplying us with polished rice, round eggs, skimmed and fat-calibrated milks and vegetables. Nayakrishi is not about industrial food production.

Nayakrishi is essentially an idea and practice of life-affirming activities. The very practice carries the seeds to change our existing lifestyles of hierarchical, coercive and exploitative relations and predatory habits and propensities. The practice is based on a very simple guiding tip: observe, learn, taste and experience the processes of life as nature and transform in order to unleash the *ananda* -- the joy of Living. The nature, in Nayakrishi, includes the observer and the observed, the agent and the field of actions, the result and the process, etc. Human beings or human communities are not separate and independent from nature; nature has no meaning without being capable of thinking, imagining and acting upon her.

Similarly the result we seek can not be separated from the practice we initiate. Practice is not a means or instrument to achieve a goal, but a form of seeding that unfolds into the tree. What we seed is what we get. The interactive practice of Nayakrishi is also to be transformed in the act of participation, in order to open up the immense possibilities of joyful activities and happiness in and around us. This is a very simple principle but such participation is impossible unless we squarely challenge existing relations that assert hierarchy, control, destruction, exploitation, disintegration, fragmentation or in other words unsustainable practices.

Nayakrishi is for unity. It assumes or imagine that there is a unitary feeling of our being, a sense of joyful oneness, a premise upon which all entities are arranged and ordered or could be gathered and held, it is good to cultivate such imagination in order to frame all our activities. It is beautiful to imagine that we are cultivating the One, the omnipotent whole of which we are all parts: animate or inanimate. The truth of unitary oneness or the sense of belonging to One is in the power of our imagination, it is immaterial whether One exists or not. It may turn out that we are indeed the One. If One does not exist we will cultivate ourselves into One.



But Nayakrishi is also about diversity. The biodiversity and genetic resources is a major area of work of Nayakrishi. However, the ability to appreciate the bounty and the diversity of beings is dependent on the cultivation of the faculties of the observer. Diversity is not merely the property of the observed. There could be no diversity unless faculties are consciously developed to distinguish diverse elements in their difference, unity, connections and relations. While most of us as naturalists, conservationists or passionate ecologists would like to conserve and use biodiversity outside our own in nature, in the forest or in the landscapes, Nayakrishi does the opposite: cultivates the faculties to experience, taste and use the multiple manifestations of life between experience and actions.

This is also the reason why Nayakrishi insists on going beyond the hegemony of sight, of vision. It is important to appreciate the capacities of taste, touch, smell and hearing and reclaim nature in an authentic and directly experiential mode of being as farmer does. The meaning of 'farmer' in Nayakrishi is not merely remaining engaged in agriculture, but the art of cultivating all our faculties to unleash the force of nature.

Farming practice of Nayakrishi Andolon follows various operational rules. These Rules are summarised in 10 statements adopted by the farmers themselves, mirroring 10 fingers of their hands. They are developed through day to day experience and knowledge.

# CHALLENGES FACING TRADITIONAL HEALTH SCIENCES OF INDIA

DARSHAN SHANKER, FRHLT, BANGALORE, INDIA<sup>14</sup>

## INTERNATIONAL CONTEXT

India's Traditional Medicine sector, also called AYUSH sector, is one of the most advanced national programs in the world for the promotion of traditional health sciences. The Indian educational, research and industrial infrastructures for the traditional health sciences are perhaps the largest in the world. India also has put in place a basic regulatory framework for ensuring safety, quality and efficacy of traditional knowledge products and services.

## PROFILE OF AYUSH EDUCATION INSTITUTIONS IN INDIA

	<b>Under Graduate Colleges Govt &amp; non-Govt</b>	<b>Post Graduate Colleges Govt &amp; non-Govt</b>	<b>Universities</b>
<b>Ayurveda</b>	219	57	2
<b>Yoga</b>	11	2	2
<b>Unani</b>	37	8	
<b>Siddha</b>	6	3	
<b>Homeopathy</b>	178	31	
<b>Naturopathy</b>	10		

However, some critical gaps exist:

- Sub-critical investments in education
- Urgent need for educational reforms due to growing domestic and global demands for *mainstreaming of complementary healthcare* in modern societies.

## PROFILE OF AYUSH GOVERNMENT HEALTH SERVICES INSTITUTIONS

	<b>Govt. Dispensaries</b>	<b>Govt. Hospitals</b>
<b>Ayurveda</b>	15,193	753
<b>Yoga</b>	71	7
<b>Unani</b>	1,153	74
<b>Siddha</b>	444	276
<b>Homeopathy</b>	5,634	223
<b>Naturopathy</b>	55	21

- Insufficient data on the quality and *social impact of the health services* provided by the Government AYUSH institutions.
- In Kerala and Tamil Nadu and northern states like Himachal, the public acceptance for AYUSH services is believed to be high
- AYUSH sector is not engaged in *public health programs*
- In last two decades in urban areas, the services of AYUSH private sector have significantly grown.

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<sup>14</sup> Based on the power-point presentation made during the meeting.

## **NATURAL RESOURCE BASE OF AYUSH**

- The resource base of AYUSH is largely of plants, around 6200 species.
- Wild populations of several hundred species are under threat.
- In 2002 the AYUSH Department established a National Medicinal Plants Board (NMPB).
- There are also around 400 species of medicinal fauna and around 70 different metals and minerals that are used by TM in India.

## **RESEARCH PROGRAMMES**

- The overall public and private investment on R&D is *extremely* small
- Important output is the pharmacopeias and formularies of the various systems of medicine
- No critical report on the quality or social impact of TM research on health sector has been prepared
- Para-surgical technique of shara-sutra for management of lower anal fistula is example of a research output that has had social impact.
- Significant efforts in the area of AYUSH informatics have been initiated
- New trans-disciplinary research has been initiated on *Ayurvedic biology*
- Currently there are no research centers wholly dedicated to fundamental research. This is a matter of concern because it can weaken the roots of TM

## **AYUSH INDUSTRY**

- 9000 licensed industries with an estimated total turnover of around Rs. 6000 crores (around 1 billion Euro).
- Since 2002 the GMP Act has become applicable to the AYUSH industry
- R&D infrastructure of the small-scale sector is insufficient to implement the standards prescribed under the GMP Act
- 70% of the Indian exports consists largely of raw materials and around 30% is of finished products
- Indian exports led by a trader's vision rather than a knowledge-product vision

## **LOCAL HEALTH CULTURES – THE PRAKRIT ROOTS OF AYUSH**

- There are around 1 million village-based and community supported traditional healers in India.
- Local communities have been managing malarial fevers, diarrhea, primary health care issues & conditions, maternity care and health problems of domestic livestock with the help of ecosystem specific plant resources.
- Historical, sociological and epistemological evidence to conclude that folk healing traditions have symbiotic relationship with Ayurveda, Siddha and Unani systems.

## **CONTEMPORARY RELEVANCE OF TRADITIONAL MEDICINE**

- Healthcare scenario in India and globally is undergoing a dramatic transformation

- Change is also evident from recent health seeking behavior studies
- As high as 40% of the population seeks medical support from complementary healthcare
- Modern societies are moving towards accepting pluralistic healthcare regime
- It is evident that no single system of healthcare has capacity to solve all the health needs of society
- India's Traditional Knowledge Systems can contribute significantly to medical pluralism

#### **FUTURE POTENTIAL FROM TRADITIONAL MEDICINE**

- TM can provide original global solutions in several systemic disorders and in preventive & promotive health.
- Ayurvedic biology can create new trans-disciplinary paradigms related to pharmacogenomics and nano-drugs from metals and minerals.
- TM can provide health security via ecosystem specific plants to rural households.
- TM can provide livelihoods to women and farmers.

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# BIODIVERSITY AND SUSTAINABILITY: ISSUES IN COMMUNITIES

NARAYAN KAJI SHRESTHA, WATCH, NEPAL

## INTRODUCTION

Nepal is endowed with rich biodiversity which is a reflection of its unique geographical position, and altitudinal and climatic variations. The distribution in Nepal is as follows:

Types of Land	Area in Ha. (Year 1998)	Percentage Area in 1978		Percentage
Forest Area	4.27 million	29	5.42	37
Shrub-land	1,56 million	10.6	0.71	5
Grassland	1.75 million	12	1.75	12
Farmland	3.0 million	21	3.05	21
Uncultivated	1.0 million	7		
Other	3.22	20.4	3.82	26

According to the National Biodiversity Action Plan (NBAP) because of Nepal's extreme altitudinal gradient there are 10 bio-climatic zones, from tropical to high Himal. This occurs within a horizontal span of less than 180 km, making Nepal a treasure house of biological and cultural diversity. A total of 118 ecosystems, 75 vegetation and 35 forest types have been identified. Nepal comprises seven ecological zones which occur in the following order from south to north: (a) Terai, (b) Siwalik zone, (c) Mahabharat Lekh, (d) Midlands, (e) Himalaya, (f) Inner Himalaya, and (g) Tibetan marginal mountains.

The biodiversity of Nepal has international importance in terms of the number of globally threatened wildlife and flora elements as well as the diversity of ecosystems represented within the area. Within the lowlands there are 1,885 species of angiosperms, 61 species of bryophytes, 81 species of pteridophytes, and 648 species of birds. In the Mid-hills there are 3364 species of angiosperms, 493 species of bryophytes, 272 species of pteridophytes, 16 species of gymnosperms, 557 species of butterflies, 76 species of fishes, 29 species of amphibians, 56 species of reptiles, and 691 species of birds. And, in the highland area there are 38 major ecosystems, over 2,000 phanerogamic species and large number of endemic species. (NBAP 1998)

Rangelands include grasslands, pastures, shrub-land and degraded forest land. These areas provide a variety of medicinal and aromatic plants from upper Himalayan region, and supply forage or vegetation for grazing and browsing animals. Nepal's rangelands have high biodiversity as they range from subtropical savannas to temperate grasslands and alpine meadows, and a cold, arid steppe north of the Nepal Himalayas. Nepal's total grassland area is

estimated to cover about 1.75 million hectares, or nearly 12 percent of the total land area. Key sources of rangeland in Nepal come primarily, from high mountains and high Himal *areas* which make up nearly 79.83% of Nepal's total rangeland. Nepal's high altitude rangelands are home to a unique assemblage of flora and fauna which comprises about 131 endemic plant species (53% of the total number of endemic plants in Nepal), 41 key non-timber forest products (including primarily medicinal herbs). Endangered wildlife species also predominantly live in this region; they are the snow leopard, Tibetan wolf, Tibetan argali, lynx, brown bear, Tibetan wild *ass*, and wild yak (status unclear). Although bird species diversity is low, 9 species are restricted to alpine rangeland and 5 species have international significance in rangeland. Of over 20 indigenous breeds of livestock species that are found in Nepal, 8 endemic breeds are from the alpine region. (NBAP 1998)

## **PROBLEM AND ISSUES**

People living in different ecological zones of Nepal depend upon traditional medicine for themselves and for livestock. There is abundant local knowledge, and people have been using such medicines for centuries. This knowledge is transmitted from parents to selected children, mainly male members of a household. However, there is a danger of such knowledge disappearing, because there is no system to record the information, and because of a belief that if such knowledge becomes open the treatment will not work.

Another threat to biodiversity and its sustainability is the increasing demand for NTFP. People are aware that such products are in demand and available in their area, and NTFPs *are being* harvested indiscriminately. Traditionally collection and use was limited to local needs, but now there is no system, at least in the government forest, and even though licenses are required for collecting products this is not enforced. Within Community forestry the focus is mainly on timber and fuel-wood, creating an open access or "Tragedy of Commons" scenario for NTFPs.

The main use of NTFP in Nepal is for herbs which are transformed into medicines. As demand for herbal medicines is increasing, the danger for disappearance of these herbal plants is also increasing proportionately. In the Higher Himalayan region NTFPs overshadow timber because timber is mainly used for local construction. Herbs, however, are used locally in small amounts, with larger quantities sold for export. This demand is increasing every year. The demand if translated from legal exports which was 2690770 Kg. in 1998 and 2140405 Kg. in 1999 rose to almost 3500000 Kg in 2000. Probably, similar amount or more is traded illegally. So it can be assumed that 8 thousand to 10 thousand metric ton of herbal products are being exported from Nepal.

Villagers even from far away places are primary collectors of medicinal plants. They collect seasonally from forest area and also from grasslands based on demand and price. They are very poor, live a hand-to-mouth existence, and do not have regular employment. Collecting herbs from the forest is an opportunity for making money, and collectors often travel for several days

and stay in the area while the season lasts. Even schools are closed to allow students to go for collection. The products are sold to local agents who pay based on demand and surplus. In many cases, the collectors have already taken advance from the agents so they are forced to sell at a price which is quite low. Thus, to get more money collectors maximize their harvest with little thought to the impact on the sustainability of the resource. Because there is no collection system, and little knowledge about regeneration and sustainability, species are being endangered every year.

## **CAUSES OF PROBLEMS**

Forest loss became a problem in Nepal when indigenous management was replaced by Department of Forest, in name but not in action. Even though indigenous forest management systems were hierarchical and dictatorial, biological resources were taken care of. The traditional system was undermined, however, without adequate personnel or sufficient local knowledge to effectively manage and protect the vast and diverse forest resources in Nepal. Biological resources, especially NTFPs, are being endangered because of indiscriminate and premature harvesting, overgrazing, burning, the lack of knowledge and a system for monitoring collection, and greed and poverty.

Another problem in the mind-set of forest officials who think they have absolute rights over forests, and do not follow national policies nor support existing local management systems. Forest officials also lack knowledge about the area and products. As scientists and technicians they are supposed to offer technical guidance on ecosystem management; instead, however, they are often implicated in a web of contributions, bribes and bribery to higher levels and middlemen. The result is local people respond by "stealing" products rather than managing the resources. With the lack of regulation and de facto open access, they do so indiscriminately thinking that if they do not collect, others will collect anyhow. In one case study, within a span of 200 km. the collectors of NTFPs had to bribe forest officials and police in 11 different places. When this was reported to the then Director General of Forests, he did nothing.

## **CASE STUDIES**

In spite of this very grim situation, there are some good examples emerging where local people are managing and sustainably harvesting NTFPs with the help of NGOs. The two case studies are given below:

Humla, one of the most remote districts in the north-western part of Nepal, is endowed with 316 species of plants which can be used for herbal medicines, aromatic and essential oils. There was an indigenous system of management of forestry resources in the area, but with introduction of so-called "new development paradigm" the local system faded. At the same time, demand for Humla's NTFPs increased and agents started penetrating in the area. Being a very poor area, people took this as an opportunity to increase income, and this began to affect the valuable biological resources and biodiversity of the area. ANSAB started an action research project to address this issue. It formed a local people's organization: Humla Conservation and Development Association (1997) which

participated in the action research, and developed guidelines for sustainable harvesting. As collectors were exploited by the agents, collectors' cooperative was formed with its own processing unit: Humla Oil Private Ltd. HCDA also promoted community forestry in the area. When community forestry were established, they developed operational plans to address issues of NTFPs. This initiative has influenced other areas in the Karnali, Seti and Bheri Zones - some of the most remote and poorest areas in Nepal. Because of this initiative, people are now starting to get a better price.

Another case study is related to a nomadic group, called Chepangs or Praja. Chepangs refer to themselves as "king of forests" and live in forests, sustaining themselves by hunting and gathering. But as forests started to degrade and then became community forests their way of life was endangered. They tried to switch to agricultural production, but they lacked knowledge and skills and the (and that the land they had occupied was not appropriate for crop production. Because of this, one NGO called SEACOW started to work with them, helping them to grow and collect NTFPs. This was also an action research project in collaboration with the Praja Community Development Programme. After raising awareness about the availability and possibility of NTFPs and field visits to various areas, the Praja collectors decided to form a cooperative which is still operating. SEACOW itself developed an Alternative Herbal Industries (AHI) in 1998 for processing and marketing but the Praja Cooperative and other collectors are also taken as share holders. AHI has since expanded its activities in various areas. It has started becoming profitable now. One example is given below to show its effect on collectors' incomes:

<b>Price in Nepali Rs per Kg paid to the Producers of the Products (1999):</b>			
<b>Herbs( NTFPs)</b>	<b>Alternative Herbal</b>	<b>Local Companies</b>	<b>Local Agents</b>
Amala (Amalaki)	79.83	38.00	15.00
Harro (Haritaki)	66.03	25.00	10.00
Barro (Vibhitaki)	59.13	22.00	8.00

The above figures show how primary producers and collectors are exploited by the agents and local companies. AHI has assisted Prajas to form community forests and develop operational plans focusing both on NTFPs and timber which does not exist right now in degraded forests. It has also started working with other community forests, collecting and processing *Bel* fruit (which has medicinal value) for making squash.

## **POSSIBLE SOLUTIONS AND RECOMMENDATIONS**

Nepal is rich in biodiversity and NTFPs, especially herbal plants. These plants were being used locally, but are gradually being replaced by other kind of medicines. However, because of the increasing demand from international markets, herbal products are being collected aggressively and indiscriminately. Driven by a profit motive, every one is trying to make as they can, as fast as possible. This short-term perspective and lack of oversight is endangering the biodiversity of Nepal. However, attempts are being made to systematically monitor and manage collection, through community forestry user groups and

NGOs that are concerned with protection, regeneration, and maximizing benefits for collectors and/or primary producers. There is need to study these initiatives so that they can be replicated in other areas.

In Nepal, according to the Master Plan for the Forestry Sector, 61% of forest land is supposed to be handed over to local communities as community forest. Communities have shown that they have the interest, willingness, commitment, and capability to manage forest areas when they are given user rights in perpetuity. Until now, however, only about 17% of forest land (about 1.2 million Ha) has been handed over to 14,000 user groups. Another 2.2 million Ha remains to be handed over to user groups, probably amounting to another 30,000 groups or so. While developing management or operational plans of CF, NTFPs should also be prioritized - especially to allocate open spaces for plantation of NTFPs and management of already existing NTFPs to poorer users so that their livelihoods can be improved. For this interest groups or cooperatives need to be formed, and their management rights made secure.

Grazing areas, meadows, and shrub-land should be placed under community management, because they are also degrading and depleting very fast. The same process followed in community forests should be used for forming user groups and handing over management rights of these areas. The grazing and management of biodiversity need to be balanced. These resources need to be regenerated and/or replaced until they can be sustainably harvested and used.

There is ample proof that the DoF has neither the capability nor the commitment to manage natural resources so their role has to be changed. They should offer scientific and technical advice, and act as facilitators for forming user groups rather than as policemen and Thulo maanche, They should monitor processes, programs, and provide necessary feedback and inputs.

NTFPs can be a main source of livelihood for those who do not have land or other resources. Examples have shown that collectors are ready to form groups and cooperatives, and develop management plans by consensus for sustainable management of NTFPs. This should be encouraged. Resources should be made available to CBOs, NGOs, and local groups. The case studies in this paper demonstrate that there is possibility of increasing income for collectors by 600/700 times, through the proper management and marketing of herbal products. To stop illegal collection, a locally developed and agreed licensing system should be developed and enforced. The system developed by RUGMARK is a useful model. Research has shown that externally developed certification systems are quite cumbersome, complicated, and generally not suitable for local communities.

Many users and collectors have started processing units. Be/squash, Nepali handmade papers, herbal tea, essential and aromatic oils are some of those products. Local industries can be started with proper shares to collectors. But principles of fair trade must be enforced.

The Institute of Forestry or other institutions should start short-term

courses and a diploma specializing in NTFP management to produce specialized human resources that can promote management properly.

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# **CONDUCTING RESEARCH ON SAFETY AND EFFICACY OF DIFFERENT TRADITIONAL MEDICINE THERAPIES**

**TEMPA GYELTSEN, NITM, BHUTAN**

## **INTRODUCTION**

Numerous traditional medicine based-therapies have been practiced since prehistoric time in Bhutan. Today, acupuncture with golden and silver needle is the single most therapy used in the indigenous units throughout the kingdom. Other therapies like steam and water treatment, blood-letting and cauterization are also provided by trained traditional practitioners in the hospitals.

In 2005 alone, more than 40% of the 32,641 patients treated at the National Traditional Medicine Hospital in the capital availed different Traditional Medical therapies. This is a clear indication of the popularity of TM therapies among the Bhutanese population, given the small population of over 600,000 (Housing and Population census 2005).

It is important to establish in the initial stages what is meant by TM therapies. About two centuries ago, all gso-ba rigpa practitioners of the Himalayas agreed not to perform invasive practices on their patients, thus eliminating real surgical practices. Therefore the procedures that have remained are all non-invasive and most invoke the use of heat to cauterize the skin, thus providing a crude but effective system of disinfection.

## **SAFETY AND EFFICACY**

Safety and efficacy of TM therapies has been a matter of concern for both traditional and allopathic health workers alike. This has resulted in the standardization of traditional procedures including necessary changes based on the principles of asepsis and disinfection in the first ever national workshop for Bhutan's traditional doctors held in December 1991.

Untrained and incompetent Traditional healers are reportedly found practicing TM therapies in the villages, thereby making it more susceptible to safety and efficacy related complications. The traditional medicine units uses outreach clinics to encourage healers to change some practices and improve others. However there is need to conduct a nation wide survey and document different traditional therapies, in order to improve evaluation of safety and efficacy of TM therapies which is an integral part of Bhutanese Traditional Medicine.

Bhutanese medical folk lore is richly endowed with such therapies and it has been successfully put to use through the centuries. But the absence of any reported or documented side-effects and other complications is not an absolute assurance of safety and effectiveness for TM based therapies. It is therefore important to conduct studies and research on the safety and efficacy of TM-based therapies in accordance with generally accepted principles.

## **POPULAR TM THERAPIES: PROMOTING SAFETY AND EFFICACY THROUGH PRACTICE/ APPLICATION**

### **1. Accupresure**

Accupresure is the single most utilized therapy in the BTM. Unlike in Chinese acupuncture this practice does not normally represent a health hazard due to two main factors.

-The golden or silver needle is not inserted beyond the term.

-The needle is heated and it cauterizes the skin, thus disinfecting the minor wound that it causes

The measures that have been adopted are therefore only of a general nature and stress the need for hygiene as a normal standard in all hospital activities.

### **2. Blood letting**

Blood-letting obviously carries by far the greatest risk of hospital contamination. Traditionally minimal care is taken to avoid bodily contact with the patient blood which is extracted during this practice. The first ever national workshop for Bhutan traditional doctors held in December 1999 therefore discouraged blood letting limiting it to only few cases where no alternative treatment can be substituted and that too when the practitioners is confident with the procedure itself and the points to be used.

### **3. Cauterization**

This procedure does not need particular attention as they are disinfected while burning the skin. It is important though to advocate care to avoid burning beyond the derma, a deep burn, if it occurs, heals very slowly and remains for days open to secondary infections with risk that what was meant as a form of treatment, becomes instead the cause of a chronic ulcer. Different metals, wood and animal horns are heated and used to cauterize the skin.

### **4. Moxibustion**

Different plants, medicated oils etc. are burned in the skin at different pressure points. The same considerations apply here as for acupuncture and cauterization.

### **5. Cupping**

As this procedure involves some bleeding, the same general considerations and precautions as per blood letting apply.

### **6. Herbal bath and fomentation (steam treatment) and stone bath**

Normal hygienic measures are practiced for water and steam treatment. The tub for the stone herbal bath should be washed with soap or any other detergent between patients, as same water should not be used for more than one patient.

Proper ventilation should be ensured to the same room, towels and linen changed after each patient.

## **NEEDS TO RESEARCH ON SAFETY AND EFFICACY OF TM THERAPIES**

Although numbers of measures have been taken in order to improve and assure safety and efficacy of TM therapies. ITMS, since its establishment is unable to conduct research and clinical trials on safety and efficacy because of the human resource and financial constraints. However the institute has realized the need to carry out detailed studies on the subject in the coming years, principally due to the following points.

- Evidence base on safety, efficacy and quality of TM therapies.
- Nature of mechanism of action of individual TM therapies, including patterns of response to treatment.
- Standardization of different TM therapies and development of technical and methodological guidelines based in it.
- Feasibility of TM therapies in treating chronic diseases like gout and arthritis
- Development of new ways to manufacture safe, effective and standard TM therapeutic instruments taking advantage of the latest technologies
- Standard indication for the use of different therapies
- Regulation and registration along with safety monetarily for TM therapies
- Strengthened and increased organization of TM therapies providers through productive national and regional interaction.
- Strengthen cooperation among TM therapies providers and allopathic medicine practitioners by exchange of accurate information and networking.
- Carry out nationwide survey and studies on patient satisfaction and long-term after affects of different therapies
- Handling accidents that may occur in the course of TM therapies application
- Develop competent and well supervised theoretical and practical training programmed in using the TM therapies.

## **CONCLUSION**

It's important to have scientific evidence base in order to insure the acceptance of traditional therapies among the modern population which is solely driven by scientific reasoning and motive. In the endeavor it is also equally necessary to maintain the age old essence of these therapies because the holistic approach to health in traditional medicine makes it highly difficult to access safety and efficacy of traditional therapies and medicine in terms of generally accepted scientific norms. Consideration of various factors with in its holistic nature like equilibrium between body and mind ,their environment and etc. provides a paramount challenge to develop standard parameters for evaluation. Therefore it is of great importance to take in to account these features while studying the safety and efficacy of TM therapies.

# EMPOWERING WOMEN AND COMMUNITIES FOR HEALTH AND HEALING! SMITA BAJPAI, CHETNA, INDIA

*“Samdosha Samagnish Samdhatu Malakriyaha  
Prasanatmendriya Manaha Swasth Ityabhidhiyate”*  
- Ashtanga Hirdaya Sutra Sthan

The definition of health as mentioned in Ayurveda can be summarised as “Health is a state of balance and mental and spiritual bliss”. However, in most South-Asian countries, a large percentage of people, particularly women, young people and children from the disadvantaged sections of the society, living in rural, remote areas do not enjoy this state of total health and wellbeing. The high levels of malnutrition, high neonatal, infant and maternal mortality rates, the increasing rural debt for health care are some pointers indicating the burden of deaths, disease and disabilities in the region.

In the same context, there exists a wealth of resource-knowledge, skills, human and material-in the form of people’s healing stream, where women play a central role. However due to unequal gender, class and caste relations, the health concerns of women and their healing knowledge is seldom recognised. There also exists formal streams like Ayurveda, Yoga, Naturopathy, Unani, Siddha etc. which are institution based, codified and documented.



CHETNA is a Non-Government support, training and advocacy organisation based in Ahmedabad in India. CHETNA’s mission is to assist in the empowerment of women, young people and children so that they are able to gain control over their own, their families and communities lives. The geographical outreach is in the states of Gujarat, Rajasthan and Madhya Pradesh, at the National, South Asia and International level.

CHETNA along with several partners has recognised that people’s healing knowledge is one of the key strategies for women’s /communities empowerment. Over a period of twenty five years, CHETNA has implemented various empowerment models at the community level and documented them. Efforts have also been made to mainstream and conduct advocacy for the same.

This paper/presentation discusses the different models of empowerment implemented at the field level recommendations for replication/implementation at the national/regional level.

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**EMPOWERMENT IS..**

A process to develop one's own space within a power structure based on one's values and choices but in collective effort with the other actors in the power structure. (CHETNA 2002)

Most women and communities in rural/tribal areas of India / South Asia are in a poor health, nutrition and socio-economic status due to caste, class and gender biases.

## CHETNA'S MISSION



To assist in the empowerment of children, young people and women from disadvantaged sections of the society so that they are able to gain control over their own health, their families and communities health.

With a view to assist the process of empowerment, CHETNA has implemented various models of empowerment in collaboration with stake holders.

### Model-1

- Understand local health traditions through basic principles of Ayurveda.
- Classify practices in to sound, distorted

and harmful.

- Identify areas for Research
- Orientation of programme implementers.
- Mainstream in to current programmes.

### LSPSS-CHETNA study on local health traditions (1989-1995)

- An all India study on traditional practices during pregnancy, childbirth, childcare in 12 states . Listening to 1200 women/dais.
- Vaidya's reviewed and discussed the reports and classified practices in to sound/harmful and identified areas for further study.
- State and National level dialogues with multiple stake holders
- Documentation and Dissemination-“Her Healing Heritage”
- Incorporating in NGO and GO programmes.

### Model-2

- Identify and prioritize health issues which are neglected
- Collect local knowledge of healing from multiple stake holders
- Review literature to identify research areas
- Build capacities of local communities
- Document and Disseminate evidence.

Shodhini (1989- 95)

- Women researchers in 8 states came together to identify neglected gynecological concerns.
- Collected 350 herbs used by healers/women
- Literature review indicated a similar number of herbs used by communities but not mentioned in literature
- Trained local women-”Arogya Sakhi”- in basics of Gynecology using herbs
- Documented stories/experiences of women. “Touch Me Touch Me not”
- Mainstreamed in NGOs and GOs efforts.

### **Model-3**

- Identify local plants for primary health concerns
- Review literature for validation and prioritize plants for promotion.
- Raise awareness of multiple stake holders
- Documentation
- Mainstream in to public health system

CHETNA-AYUSH collaboration on Primary Health Care (2001-2002)

- In 4 districts of Gujarat state,8 NGOs came together to document health related biodiversity
- A literature review was conducted to validate the information- Ayurveda /Materia Medica /net
- Awareness of multiple stake holders, women, farmers, children, young peoples, local healers, vaidyas
- Documentation and dissemination

Project Outcomes

Total participants in different activities including yoga, farmers’ training, practitioner’s workshop, community meetings, fairs, etc.: 36,354 persons.

Herbs on which awareness was raised:

- Neem- for fever, skin problems, vaginal infections
- Aloe vera- for burns, dressing wounds and painful periods
- Asparagus Racemosus- for improving nutrition
- Garden cress - for improving nutrition
- Andrographis paniculata- for prevention against malaria
- Goose berry- for improving overall health
- Tinospora cordifolia- for improving immunity
- Holy basil - for coughs and colds
- Adhatoda vasica - for coughs and cold
- Ginger- for reducing phlegm –cough
- Turmeric- for cuts and wounds/cough/phlegm
- Garlic - for vaginal infections

Development and Dissemination of IEC material:

- 10,000 booklets titled “chalo swasthya baniye”
- 8 sets of exhibition on ayurvedic approach to maternal and child health care
- 200 booklets on “Kesudo kahevdaye re” herbs used by communities for primary health care and the exhibition displayed in two districts.
- booklets on yoga, pamphlets and leaflets on herbal medicine developed by CBOs

#### **Model-4**

- Identify a common concern based on local and national priority
- Collect local views and measures adopted
- Implement a complete circle of activities
- Validation Awareness Cultivation Production Consumption
- Documentation and advocacy

CHETNA-AYUSH Department collaboration on Anemia (2004-2005)

Involving 10 villages of Bhiloda Taluka of Sabarkantha district & Five Urban slums of Mehsana in Gujarat state

Even today, Anemia is one of the most common nutritional deficiencies among women and young people in India. Anemia is a leading cause of morbidity in women and young people, affecting their productivity. Anemia is indirect cause of Maternal Mortality. Women complained of weakness and fatigue and were visibly pale during our field visits.

AYUSH approach was used because it is a holistic approach encompassing food-action and thoughts with focus on enhancing the digestive and absorption capacity of the body and balancing the fire element of the body. A combination of herbs that promote digestive capacity and iron is used for treatment with emphasis on local foods and herbs. Anemia was categorized according to individual constitution- *vaayu*, *pitta*, *kapha* and due to mud eating leading to more effective solutions. There is need for other appropriate strategies, which are locally available, acceptable, affordable, sustainable; Enhance women's access to nutritious food; Which affect a change in life style.

As a first step this meant learning from women and local healers about:

- Words used: *Nablai*, *kamjori*, *sharir galvu*
- Reasons: Overwork, stress, irregularity of food
- Prevalence: children, women, elderly women
- What needs to be done?: eat food regularly, more food, special food

The second step identified local foods and herbs. As the third step there was literature search, meetings with vaidyas to standardise Ayurvedic treatment

- *Saptamrit loha*
- *Punarnava mandoor*
- *Arogya Vardhini*
- *Shatavari Churna*

AYUSH public health dispensaries provided treatment. Then workshops with women, husbands, young girls, boys were organized at Fairs. Camps and yoga classes for school going girls, boys, women, men, dais were held. Training of men and women farmers was carried out. Workshops for ayurvedic and homeopathic practitioners of the public and private sector were organized.

Then validation was carried out through monitoring of Haemoglobin (Hb) levels of 30 women in SK before and after 3 months of intervention and monitoring of Hb levels of 60 women in Mehsana before and after intervention.

The changes observed included the following:

- Increase in Hb levels up to 2 gm%. Dietary and life style modifications enable speedy increase.
- Increased awareness and value about nutritive value of foods
- Behavior change in women and young people, focus more on iron rich foods in daily diet.
- Increase utilization of services provided by AYUSH department
- Farmers cultivate nutritive crops for local consumption
- AYUSH practitioners (private and public sector) screen women clients for anemia and provide Ayurvedic treatment at subsidized cost and focus on educating clients on life style changes.

### **Model-5**

- Identify specialized traditional skill
- Organize practitioners
- Develop Standards of Practice
- Build Capacity of Practitioners
- Advocacy for their recognition in public health system

### **Pioneering Effort in Gujarat**

- Launch of Dai Association – Gujarat (7 Dai, 7 NGO, GO partnership 5000 dais, 15 NGOs in 18 districts)
- Standardization of Traditional Midwifery - curriculum developed by NGOs - publishing support by DHFW
- Government recognition of Dais' role through a GR
- DHFW partially funding capacity building of Dais under RCH-2
- DHFW provided financial support to organize Dai`s in 15 districts

The story of a Dai from Gujarat: “ It was night when a neighbor called me for help. On reaching her house, I realised that the woman needs hospital care. I took her to the civil hospital which is the nearest. The staff asked me to take the woman to the city civil hospital. I knew that she can deliver here. I woke up the medical officer and shared my concern. He asked the staff to admit the woman. She delivered a baby safely.”

The Dai Association Gujarat has developed a comprehensive capacity building curriculum for dais to be implemented over a period of three years. The training

cost comes to Rs.5000/- per *dai* in an established training center. The GOI has a 10 day programme for Dais focusing on clean delivery @Rs.2100/-per *Dai*

The Government of Andhra Pradesh through Academy of Nursing Studies has implemented a 90 day intensive training programme for Traditional Birth Attendants (TBAs) at a cost of Rs.10,000/- per Dai including training centre cost. The working group on Local Health Traditions has worked out a 15 crore plan to organise and strengthen dai associations in 15 states. A Rs. 5 lakh seed money to dai association has been recommended. The struggle for recognition, value and empowerment of Dais continues.

## **ISSUES**

- Interface between plural system of health and healing ?
- Interface between rights based and empowerment-self reliance approach?
- Standardisation and regulation issues?
- Monitoring indicators from AYUSH perspective? Protocols for trial ?
- Mainstreaming and replication within the public health system ?
- Policy advocacy at various levels for recognition of traditional healers, including dais?
- Reach out and develop a critical mass?

## **RECOMMENDATIONS**

- Develop a national /regional task force on Indigenous health and healing therapies that will
- Include practitioners from multiple healing systems / researchers / policy makers/advocates/NGOs
- Works towards developing appropriate strategy for programme/ policy/ media advocacy.

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**APPROACHES TOWARDS THE PRECLINICAL TESTING  
AND STANDARDIZATION OF MEDICINAL PLANTS**  
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**INTRODUCTION**

Before the introduction of modern medicines, disease treatment was entirely managed by herbal remedies. It is estimated that about 80% of the world population residing in the vast rural areas of the developing and under developed countries still rely mainly on medicinal plants. Medicinal plants are the only affordable and accessible source of primary health care for them, especially in the absence of access to modern medical facilities. Studies reveal that there are more traditional medicine providers than the allopathic providers especially in the rural areas (WHO 2002).

The use of traditional medicine has increased in developed countries also, mainly due to the failure of modern medicine to provide effective treatment for chronic diseases and emergence of multi-drug resistant bacteria and parasites. The adverse effects of chemical drugs, questioning of the approaches and assumptions of allopathic medicine, their increasing costs and greater public access to information on traditional medicine has also led to an increase in interest in alternative treatments (WHO 2002). Plant extracts have become a source of hope as a wide group of medicinal plant preparations are available that have been used over the centuries almost exclusively on the basis of empirical evidence. Hence, it has become necessary to revisit the importance of these herbal medicines.

Increasing interest by multinational pharmaceutical companies and domestic manufacturers of herbal-based medicines is contributing to a significant economic growth of the global medicinal plants sector. However, a large proportion of medicinal plant research is focused on nutraceuticals, chronic and metabolic disorders (diabetes, cardiovascular, etc.) and other diseases like HIV/AIDS, malaria, etc. **Whereas, the common diseases of resource poor communities such as diarrhoeal diseases and acute respiratory tract infections (ARI) are often not addressed.** Moreover, unlike the rural communities who use fresh/dried plant material or their crude extracts, the industry lays importance on isolation of active principles or standardized fractions since crude extracts are not patentable. However, it is often seen that a crude extract is more active compared to the isolated active fractions e.g. *Cirriformia tentaculata* loses its activity upon fractionation with hexane (Kicklighter *et al.* 2003).

It is generally believed that standardization of the plant material is not required when used by the rural communities for their primary health care. But, regardless of whether the medicinal plant is to be used by local communities or by industry, a systematic approach is required for a plant identified from traditional medicine, as is done in modern medicine. It is necessary to focus on all aspects of medicinal plant research: from cultivation, ethno-pharmacology, utilization, isolation and identification of active constituents to efficacy evaluation, pharmacology, safety,

standardization, formulation and clinical evaluation. Animal toxicity studies are required to establish the potential adverse effects.

Artuso (1997) has outlined the entire process which includes formulating an appropriate strategy and he estimates that the entire process would take more than 10–20 years. This approach is very demanding since there is an estimated 250,000 species of higher plants present on this earth (Ayensu and DeFilipps, 1978). However, this scenario would change with use of the high throughput advanced screening methods that are available today. **Another approach that can prove to be a highly productive and cost effective in development of safe, effective and acceptable therapeutic agents is reverse pharmacology which is based on the documented therapeutic effects of plants in ancient texts** (Vaidya, 2006).

This paper will discuss the approaches that need to be considered while studying medicinal plants. It focuses on aspects of the medicinal plant research: from collection of plant material, to efficacy and safety evaluation through preclinical studies and phytochemical standardization.

## **SOURCE OF PLANT MATERIAL**

The prominent mode of obtaining medicinal plants is wild harvesting and most of the industrial requirement is still met through wild collection (Lange 1998). Though many medicinal plants are commonly available in the wild and can be freely harvested, uncontrolled collection and sale of large quantities of plant material from the forest can lead to destruction of many forest plants especially the endemic species that have a restricted geographical distribution. For example, medicinal plants like *Curcuma caesia*, *Rauwolfia serpentina* were reported to occur abundantly (IUCN 1994) in central India. However, due to their growing economic importance and rampant harvesting, these plants have now been categorized as critically endangered (Prasad and Patnaik 1998). The present deteriorating condition of medicinal plants in forests needs immediate attention not only for conservation but also for propagation. Countries can protect their biodiversity in medicinal plants by working with industry towards monitoring and maintaining controlled non-destructive harvesting with habitat management.

Cultivation of medicinal plants would seem as a commercially attractive option to companies because they have greater control over supply of the plant material and it is easier to control post-harvest treatment. Moreover, cultivation can reduce the dependence on collection of plants from wild and thus have the potential to save wild populations and conserve their genetic diversity.

Cultivation in kitchen gardens can lead to easy availability of medicinal plants and can be an effective means of self reliance in supply of these plants for rural communities. Communities can cultivate plants with multiple uses such as those with both medicinal and commercial value (e.g. guava) or those, which are indicated against multiple disease conditions (e.g. Nirgudi for worms, cough, aches and pains; Adulsa for wet and dry cough; guava for viral/bacterial diarrhoea, swollen gums and kidney infections) (Satyavati 1987).

The feasibility of cultivating medicinal plants would, however, depend on a

number of factors such as the ability of the species to thrive under mono culturing. The economic viability will depend on the demand and market prices. Moreover, cultivation of medicinal plants requires intensive care and management and the conditions and duration required can vary depending on the quality of the medicinal plant material required. Risks of contamination from pollution by hazardous chemicals should be avoided. Moreover, introduction of non-indigenous plant species into cultivation can lead to detrimental consequences on the ecological balance of the region (Sharma *et al.* 2005).

A point that needs specific consideration is that cultivated plants are sometimes considered qualitatively inferior to the wild collections. The medicinal properties in plants are due to the combinations of secondary products. Different plants would have different combinations of these secondary products that would often be taxonomically distinct in individual plants resulting in unique medicinal properties (Wink 1999). Secondary metabolites that are generally produced for defense against predators, pathogens or competitors or for protection/adaptation to environmental stress related to changes in soil conditions, temperature, water status, light levels, UV exposure, and mineral nutrients in their natural habitats; and are responsible for most of the biological activities. Therefore, **the secondary metabolites may not be expressed in optimum quantities when cultivated under optimum conditions to obtain better vegetative yields**. For example, the wild ginseng roots are 5-10 times more valuable than cultivated roots because the cultivated roots lack the characteristic shape of wild roots (Robbins 1998). These beliefs were also reflected in the conclusion reached through research on *Arnica montana* by the herbal company Weleda (Ellenberger 1998). Analysis of the biochemical properties of the cultivated plants showed differences when compared with wild plants that grow in poor meadows with acidic soils in mountainous areas of Europe. The rhizomes of the cultivated stocks had lost much of *Arnica's* characteristics, reducing its commercial potential.

## SELECTION OF PLANTS

As per WHO guidelines (WHO 2003), the plant selected for collection should be taxonomically same as recommended by the national pharmacopoeia or other related documents. If a new plant is being selected for collection then it should be properly identified and documented. The botanical identity, scientific name including genus, species, subspecies or variety and family of the plant should be recorded. If available, the local name should also be verified. Complete taxonomical identification is an important factor during selection as taxonomy of the plant species can play an important role in their biological activity. This was observed in our study with two varieties of *Zingiber officinale* wherein one variety showed immune enhancing properties while the other did not (unpublished data). Information regarding environmental conditions, such as topography, geology, soil, climate and vegetation at the collection site, should be obtained. Information such as the geographical distribution of the plant, its abundance, whether it is threatened or endangered, shrub/fast growing tree etc should also be obtained. It is of immense importance that a voucher specimen be deposited in a national or regional herbarium for authentication and further consultation by other researchers.

Several reviews have described approaches that can be used for selecting plants of

potential therapeutic interest (Verpoorte 2000, Phillipson and Anderson 1989, Kinghorn 1994, Vlietinck and Vanden Berghe 1991, Farnsworth 1996, Farnsworth and Bingel 1977). In general, the search for the medicinal plants can follow three main routes: random, ethno (including ethnobotanical, ethnomedical and ethnopharmacological) and ecological search (Fabricant and Farnsworth 2001). Random search is extremely laborious and the success rate could be very low (Basso *et al.* 2005). Nevertheless, important drugs such as taxol, derivatives of camptothecin and homoharringtonine have been discovered by the National Cancer Institute (NCI) in collaborations with the United States Department of Agriculture (USDA) using this method (Cragg *et al.* 1999).

The ethnobotanical, ethnomedical or ethnopharmacological approach uses information obtained from ethnobotanical survey such as the geographical distribution of the plant, its abundance, whether it is threatened or endangered, shrub/fast growing tree, easily cultivable, easily identifiable (with minimum varieties) etc. Information such as the season of collection, parts that are used and whether those parts are seasonal/replenishable and if there is any reported toxicity, are also required. The information can be obtained from traditional medical practitioners and other people such as village elders and local women who are traditional users of medicinal plants. Undertaking of an ethnobotanical survey should be by a team of local botanists, traditional healers and medical practitioners. While the traditional healers would identify medicinal plants for treatment of different diseases, the botanist can carry out appropriate taxonomical and botanical characterization of these medicinal plants, whereas the medical practitioners would help in proper identification of the disease conditions (e.g. differentiate between muscle pain and pain due to arthritis) and help in understanding whether a treatment is curative or is alleviating the symptoms only or whether it is a placebo effect.

Frequency of quote is an important indicator of the usage of the plants by the community. However, information obtained from the community may not always be reliable. It is possible that people may quote a particular plant more frequently since it is easily available, easily recognizable or resembles a certain disease feature e.g. seeds of *Bixa orellana*, which have a bright red arillus, are used in herbal mixtures used for treating bloody diarrhoea (Kufer *et al.* 2005). People may also quote plants about which they have gained information from personal communication or books. In addition, publications on medicinal plants are often compilations from other texts and seldom from personal experience, making evaluation difficult.

Ethnomedical information is available from ancient texts of different systems of medicines such as Ayurveda, Unani, Kampo, and traditional Chinese medicine. However, while using the ancient texts, one must consider the fact that the plants may have evolved over a period of time resulting in changes in their phytochemical composition and hence their medicinal properties and therefore validation is required.

Nevertheless, the success rates of the ethno-based approaches are substantially higher than those of random screening since the continued use of crude preparations are, in fact, comparable to small scale clinical trials. Tests carried out at the NCI for antineoplastic activity using this approach yielded positive activity

in the order of 2 to 5 times higher than random screening (Lewis and Elvin-Lewis 1995).

Plants with medicinal properties can also be selected using an ecological approach. The absence of predation in areas infested with herbivores, for example, can indicate the presence of toxic compounds. Selection can also be based on an approach called zoopharmacognosy, a variation to the ecological approach, which proposes the selection of plant species regularly ingested by animals, mostly primates for reducing pain, microbial or worm infestations (Berry *et al.* 1995).

It has to be specifically understood that there are certain differences in approaches when selecting plants for an industrial or a rural application. The rural community requires medicinal plants for their primary health care and hence focuses more on selection of plants for treatment of common diseases such as diarrhoea, malaria, pneumonia, wound infections, etc. On the other hand, pharmaceutical industry requires medicinal plants for formulation of herbal drugs for commercial gain and hence focuses more on urban problems such as metabolic disorders, chronic diseases, and multi-drug resistance among infectious pathogens. Whether for rural community or for industrial application the selection of plant should be based on its therapeutic efficacy in terms of its effect on the causative agent or on the host. From the rural perspective, since the understanding of disease in terms of causative agents is not possible in the community, it is important that the plant formulation should address the common causative agents resulting in a given symptom e.g. diarrhoea which is caused by various infectious agents including bacteria, viruses and protozoa. The plants selected for utilization by rural communities, should be able to control the respective diseases or else at least act as a stop gap until further medical aid becomes available. Moreover, these plants should be easily available so that the users of these medications can become self reliant.

## **COLLECTION OF MEDICINAL PLANTS**

Good collection practices are necessary for the long term survival of wild populations and their habitats. WHO guidelines (WHO 2003) can be followed while collecting medicinal plant materials.

**Medicinal plant materials should be collected in the proper season** so as to ensure the best possible quality of both the starting material as well as the finished product. Seasonal variations can affect the chemical composition of the plants and thus its biological activity. This was demonstrated in one of our studies where the decoctions of *Psidium guajava* leaves collected in two different seasons showed variable antibacterial activity against six bacterial strains, the November collection being more active than the March collection (unpublished data). In most cases, maximum accumulation of chemical constituents occurs at the time of flowering which then declines at the beginning of the fruiting stage (Mendonca-Filho 2006). The time of harvest should also depend on the plant part to be used since it is well known that depending on the plant species the level of biologically active constituents can vary in different parts at different stages of the plant growth and development. For example, Kursar *et al.* (1999) found that younger leaves of tropical rainforest plants contained secondary metabolites that were either present in very little quantities or totally absent in matured leaves. The

extracts from these younger leaves showed better biological activity when tested for anticancer activity or activity against *Bacillus subtilis* and *Artemia salina* (brine shrimp). It also applies to other components in the plant material such as the toxic components. Climatic conditions, e.g. light, rainfall, and temperature (including daytime and nighttime temperature differences) also influence the physical, chemical and biological qualities of medicinal plants. The water and temperature stress related increase in the content of active constituents such as the total phenolic compounds was shown by Nacif de Abreu and Mazzafera (2005) in *Hypericum brasiliense*. Hence the best time of collection should be determined according to the levels of the biologically active constituents rather than the vegetative yield.

Information such as the correct plant parts that are used (roots, leaves, fruits, etc.) and whether these parts are seasonal or replenishable should be obtained. The collection levels and the collection practices should also be known before initiating collection. It is necessary that the collection practices employed should be non-destructive. For example, while collecting roots, the main root should not be cut or dug up or while collecting bark, the tree should not be girdled or completely stripped of its bark. Parts that are not required or are decomposed and any foreign matter such as soil or toxic weeds should be removed during collection.

Collection of medicinal plants should not be done from places that are prone to or close to sources of contamination such as areas where high levels of pesticides or other possible contaminants are used or found e.g. roadsides, drainages, mine tailings, garbage dumps and industrial facilities which may produce toxic chemicals or active pastures that may lead to microbial contamination. Quality control ensures that the plant material is not contaminated with microbes, pesticides, heavy metals or other toxic agents (Mendonça-Filho 2006) and that the final product is of consistent high standard.

Rapid and safe transportation of the collected plant materials should be arranged in advance. Handling of the plant material such as cleaning, drying and storage, should be carried out by trained personnel.

## **PROCESSING OF PLANT MATERIALS AND THEIR PREPARATION**

Preliminary processing of the plant material that can be done include elimination of undesirable materials and contaminants, washing to remove soil, sorting and cutting. It would be advisable to dry the plant materials prior to transportation if the processing facilities are located away from the collection sites. Cross contamination of the different collected plants or plant parts should be avoided during transportation. The plant materials should be protected from conditions that may cause deterioration such as rain, moistures, etc during or after transportation till the processing begins. The plant material that needs to be used fresh should be delivered as quickly as possible to the processing facility to prevent microbial fermentation or thermal degradation.

Specific processing methods are often required, to reduce drying time, to detoxify the inherent toxic constituents, to reduce side effects or to enhance therapeutic effects. For example, the methods and temperatures used for drying may have a considerable impact on the quality of the resulting medicinal plant materials.

Shade drying is the preferred method for drying plant material since it can maintain or minimize loss of color of leaves and flowers; and the lower temperatures can prevent the loss of volatile substances in the plant materials (Ibanez *et al.* 2003, Bartram 1995). However, plants can be dried in a number of other ways: in drying ovens/rooms and solar dryers, by indirect fire, baking, lyophilization, microwave, or infrared devices. Pre-selection, peeling the skins of roots and rhizomes, boiling in water, steaming, soaking, pickling, distillation, fumigation, roasting, natural fermentation, treatment with lime and chopping are some of the common processing practices. All processed medicinal plant materials should be protected from contamination and decomposition as well as from insects, rodents, birds and other pests, and from livestock and domestic animals.

Medicinal plant preparations can be prepared in several ways that usually vary based upon the plant being used, and sometimes, the condition for which it is being used. These preparations can be in the form of infusions, decoctions, tinctures, macerations, fresh juices, etc. Some other methods include hot baths, powdered plants, steam inhalation and even aromatherapy. **Adherence to the method of preparation as mentioned in the ancient texts or by traditional practitioner is necessary** depending on the form of preparation or the plant used as they may hold important information for obtaining an effective herbal preparation. A juice of a plant may be recommended instead of decoction/powder if the active ingredients are volatile or thermo labile e.g. fresh leaf juice of *Adhatoda vasica* is used for reducing blood glucose level of diabetic patients (Ahmad *et al.* 2007). Sometimes, it is possible that due to the difficulty in preparation of the extracts and the time required, whole fresh material (e.g. leaves) or dried powder is used instead of the required extract for treatment. This may lead to potential toxicity which would otherwise not be observed due to the elimination of the toxic constituent during extraction. In this context, an example that can be cited from our study is the extraction of negligible amounts of the toxic component karanjin from the leaves of *Pongamia pinnata* in the aqueous decoction (Brijesh *et al.* 2006).

The medicinal property of plants is closely related to the different classes of phytoconstituents (such as essential oils, alkaloids, acids, steroids, tannins, saponins, etc.) present in the plant, each of which would have a preferred effective method of extraction, facilitating maximum yield in the preparation. For example, preparing a decoction might extract a group of anti-inflammatory plant steroids to treat arthritis and yet when the same plant is prepared in alcohol different antibacterial alkaloids are extracted instead. (<http://www.rain-tree.com/prepmethod.htm>)

## **STORAGE**

Storage can also influence the physical appearance and chemical quality of plant materials and hence it is necessary to maintain appropriate storage conditions so as to increase their shelf life. It is customary to store the plant material in dried form since preparations like decoctions/infusions can only be stored for a few days. Dried plant materials can be stored in whole, crushed or powdered forms in storage conditions that include use of cloth bags, clear glass bottles and plastic. Plant materials that are used fresh should be stored under refrigeration, in jars or sandboxes, or using enzymatic or other appropriate conservation methods.

However, they should be used as quickly as possible to avoid microbial contamination. Shelf life of plant material is usually ignored due to the general belief that the plant materials do not have an expiry date, however, dried plant materials usually retain their activity for about six months only. It is observed that the powdered plant material degrades faster than the whole or crushed plant material (unpublished data). Different types of plastics can be used which prevent absorption of moisture and oxidation of the plant material by preventing the exchange of gasses to increase the shelf life of the plant material.

## **BIOLOGICAL STUDIES**

Biological screening is necessary to provide a scientific basis for validating the traditional utilization of medicinal plants. A great number of screening programs are ongoing worldwide for new plant based bioactive molecules. Several researchers have worked on medicinal plants with activity against different ailments. Preclinical pharmacological studies and randomized clinical trials form an important part of the biological screening of medicinal plants. Preclinical studies usually serve to verify the data on mechanisms of action reported in animals or humans. However, a pharmacological effect observed *in vitro* or in animal models, for both safety and efficacy needs to be reconfirmed by clinical studies and the information obtained from the preclinical studies can form the basis for further clinical trials. (Lipsky and Sharp 2001, Bleicher *et al.* 2003, Dove 2003, Kenakin 2003, Knowles and Gromo 2003, Verkman 2004).

## **CLINICAL STUDIES**

Clinical studies are necessary to confirm the pharmacological effects of medicinal plants before they can be integrated into conventional medical practice. Well-established, randomized controlled clinical studies facilitate the acceptance of herbal medicines in different regions and in people with different cultural traditions. This would be especially true in case of some unrelated effects of therapy contributing to efficacy that may be difficult to measure pre-clinically. These studies should be carried out on the basis of information obtained from official national compendia and relevant literature or traditional medical practitioners. The general principles for the clinical studies that apply to conventional drugs should be followed when testing a new herbal preparation, a new indication for an existing formulation, or a significantly different dosage form or route of administration (WHO 2000). Well recorded case reports can contribute towards useful information at such times and put forward new hypothesis and stimulate further study (Morris 1989). However, double blind clinical trials may not be required when an extensive and detailed database of case studies is available. Such a database is especially important when a particular treatment is individualized.

The methods and guidelines used for clinical validation of modern medicines must be applied to herbal products even though the latter has a holistic approach to treatment. However, conventional concepts of clinical research design may be difficult to apply when using clinical research to evaluate various systems and practices of traditional medicine (WHO 2000). This could be due to the fact that herbal remedies are individualized (each person has certain predispositions to disease and susceptible to factors like environment, genetics, dietary and lifestyle)

therapies and hence depend on the proficiency (including the skills and experience) of medical practitioners.

Clinical studies, in some cases, must be adapted to deal with the specifics of herbal medicines. Single-case studies, as per the theories and concepts of traditional medicine, for the evaluation of efficacy and randomization can allow for the individualization of treatments. Methods such as randomization and use of placebo may not always be possible. Patients previously treated with plant preparation having a characteristic organoleptic property cannot be randomized into control groups or a placebo may not be possible when the plant preparation has a strong smell or taste as is the case of certain essential oils.

The number of patients required for undertaking clinical trial of medicinal plants is large not only since the study design needs to be adequate and statistically appropriate but also to cater to the control, confounders and placebo groups to provide sufficient evidence for judging efficacy of the plant under study. The increase in patient number also increases the time commitment and the expenses involved.

Therefore only a limited number of plants can be subjected to clinical trials. Hence, it is essential to undertake appropriate preclinical testing to short list plants for clinical evaluation.

## **PRECLINICAL STUDIES**

Preclinical testing helps in collection of important efficacy and safety data before clinical trials can be carried out. The preclinical evaluation and authentication of medicinal plants involves documentation and testing of their pharmacological efficacy *in vitro* (cells) and *in vivo* systems and studies of toxicology, specificity, biopharmaceutical properties and drug interactions.

The preclinical studies help in determining the therapeutic effect of the plant in question and also elucidate the efficacy and/or the mechanism of action including cell interactions, cell-environment interactions, intracellular activity, and genetic studies. Plants with novel and/or multiple mechanism(s) of action can also be identified. The advantage of these studies is that one can easily study and compare the efficacy of different plants in a cost effective manner and design rational drug combinations. This requires proper designing of screening assays that have significant impacts on the outcome of the overall drug discovery process. The selected assay should be able to mimic the *in vivo* dynamics as far as possible with high sensitivity and specificity.

The basis for designing a screening assay is the identification of valid target. An estimated 30-40% of experimental drugs fail due to an inappropriate target (Butcher 2003) and hence it is important to develop new screening assays with newer and more appropriate targets. It is crucial to establish the role of the target in question in the cause or symptoms of a disease (Williams 2003). Pharmacological manipulation of the target should consistently lead to desired phenotypic changes. The desired changes must also be reproducible in at least one relevant animal model (Drews 2003). Emphasis has to be placed on assessment of

assay quality and validation of the parameters being used.

Assay formats employed in screening can be either cell-based or biochemical. Though the logistics of cell-based assays are more challenging than with biochemical assays due to requirement of significant investments in cell culture infrastructure (Moore and Rees 2001), the current trend in drug discovery is clearly shifting towards cell-based assays. Cell-based screening has multiple advantages. It can provide biologically more relevant information on the nature of the activity (Moore and Rees 2001, Johnston and Johnston 2002). In addition, information regarding cellular membrane permeability and cytotoxicity can also be obtained.

Approaches that are commonly used for studying the pharmacological effects of medicinal plants are: use of single bioassay for screening multiple plants and use of multiple bioassays for studying single plant. The latter approach has been used widely for metabolic diseases. Unfortunately, when screening plants for infectious diseases the assay system is often limited to testing for antimicrobial activity. However, this approach is not always appropriate. Plants can exhibit their efficacy against infectious diseases by mechanisms other than antimicrobial activity. When screening plants for immuno-enhancing properties, often synthetic antigens and immunological assays are used which do not have any biological relevance to disease(s) in question.

The importance of using relevant and where necessary multiple bioassays for screening medicinal plants for infectious diseases is highlighted in our studies. Decoctions of two plants viz. *Cyperus rotundus* (unpublished data) and *P. pinnata* (Brijesh *et al.* 2006) were screened for their antidiarrhoeal activity. The different bioassays used were: antibacterial, anti-giardial and anti-rotaviral assay; adherence to and invasion of bacterial pathogens to epithelial cells; ganglioside monosialic acid-enzyme linked immunosorbent assay for *E. coli* heat labile toxin (LT) and cholera toxin (CT); and suckling mouse assay for *E. coli* heat stable toxin (ST). These assays in addition to the antimicrobial action screened the plants for colonization (adherence and invasion) and enterotoxins – the two most important features of diarrhoeal pathogenicity and thus define the possible mechanism(s) of action of *C. rotundus* and *P. pinnata* in infectious diarrhoea. It was observed that though both plants did not have marked antimicrobial action, they were effective antidiarrhoeal agents with different mechanism(s) of action. CT and LT were affected though there was no effect on ST. *P. pinnata* inhibited bacterial adherence to epithelial cells whereas *C. rotundus* inhibited both bacterial adherence to and invasion of epithelial cells. These results showed that the antidiarrhoeal activity of the plant could be due to its action on various parameters other than just the antimicrobial activity. Different plants can show activity in different assays determining their usefulness in different forms of diarrhoea. The study highlighted the necessity of looking at different parameters and not just concentrating on singular assays like antimicrobial activity for determining the biological efficacy of plants.

## Limitations of preclinical studies

1. Suitable pharmacological models have not yet been developed for many common diseases with unknown, or multi-factorial origins (Hamburger and Hostettmann 1991).
2. Some compounds which show good activity *in vitro* may be metabolized *in vivo* into inactive metabolites. Alternatively, extracts may only show *in vivo* activity due to the metabolism of inactive compounds into active forms (Farnsworth 1993).
3. The pharmacological investigation of drug interactions in multi-compound preparations is difficult due to the presence of constituents from several plants where some plants may show less specific activity and some plants may have been added to reduce the toxicity of the more therapeutically effective plants (Taylor *et al.* 2001).
4. Some of the most common side effects are difficult to recognize in animal models e.g. nausea, nervousness, lethargy, heartburn, headache, depression, stiffness, etc.
5. Extrapolation of *in vitro* dose to *in vivo* animal models and humans is difficult.

## Toxicity Studies

Toxicological evaluation of medicinal plants has often been neglected since prolonged and apparently uneventful use usually is considered as a testimony of its safety. However, a history of traditional usage is not always a reliable guarantee of safety since it is difficult for traditional practitioners to detect or monitor delayed effects (e.g. mutagenicity), rare adverse effects, and adverse effects arising from long-term use (Ernst 1998) such as for food supplements and nutraceuticals e.g. *Glycyrrhiza glabra*, which is used for conditions like bronchitis and peptic ulcers causes not only hypertension, weight gain and hypokalaemia but also low levels of aldosterone and anti-diuretic hormone on excessive or prolonged usage (Newall *et al.* 1996). The use of herbal preparations may also lead to hypersensitivity reactions ranging from transient dermatitis to anaphylactic shock (Ernst 1998). Many widely used medicinal plants have been implicated as possible causes of long-term disease manifestations such as liver and kidney diseases. The widespread use of *Scenecio*, *Crotalaria* and *Cynoglossum* has been implicated in the occurrence of liver lesions and tumours, lung and kidney diseases in certain areas of Ethiopia (Addae-Mensah, 1992).

The absence of any such documentation, however, does not automatically rule out the possibility of toxicity. It is possible that the plant treatment taken up for the clinical trials may lead to some unanticipated/unknown/unrelated side effects e.g. *Psoralea corylifolia* Linn. which is used for treating conditions like psoriasis, leucoderma, and non-healing ulcers and wounds is known to cause hepatosplenomegaly in experimental animals (CHEMEXCIL 1992). Hence it becomes necessary to carry out toxicological studies, both short term and long term.

Toxicological studies should include tests such as acute, subchronic and special toxicology that are impossible to detect clinically such as immunotoxicity, genotoxicity, carcinogenicity and reproductive toxicity (Remirez 2006). These tests help in the identification of possible target organs involved and the toxic

symptoms. Studies of special toxicology such as carcinogenesis are very important if the plants contain compounds with known mutagenic or carcinogenic activities (Chanabra *et al.* 2003).

## **PHYTOCHEMICAL STUDIES**

Phytochemical studies of the plant preparations are necessary for standardization, which helps in understanding the significance of phytoconstituents in terms of their observed activities. Phytochemistry also helps in standardizing the herbal preparations so as to get the optimal concentrations of known active constituents, and in preserving their activities.

Standardization can be carried out by obtaining a chemical fingerprint/profile or through bioactivity guided fractionation. Chemical fingerprints through chromatographic techniques are more commonly used for standardization and are obtained in terms of one or more marker compounds. It would be ideal to use the active constituent in the plant as the marker compound; however, in cases where active constituents are not known the marker compound can be independent of the therapeutic activity. Furthermore, the plant extracts can also be standardized to class of compounds e.g. ginsenosides in ginseng, kava lactones in kava, or oxindole alkaloids in cat's claw (Roman 2001). Such an approach would be suited to situations where though the active constituents are not known they are expected to belong to a particular class of compounds.

According to European Medicines Agency guidelines (EMEA 2005), quantification of substances with known therapeutic activity or markers is obligatory. As per the European Pharmacopoeia, marker compounds should be characteristic or unique for the herbal material or herbal preparation, have an established chemical structure, be present in the starting material as well as the finished product in sufficient amounts, be accessible to quantification with common analytical methods such as high-performance liquid chromatography (HPLC) or high-performance thin layer chromatography (HPTLC), be sufficiently stable, and be commercially available or able to be isolated by the company in its own laboratory.

Thin layer chromatography (TLC) and HPLC are the most commonly used methods for obtaining chemical fingerprints and identification of the crude plant extracts. However, there are several possibilities that may arise while using these techniques for standardizing the crude extracts. It is possible that the plant material collected from the same plant in two different seasons can show different phytochemical fingerprint and therefore different biological activity or two plants with identical taxonomy collected under same environmental conditions can show different phytochemical fingerprint but similar biological activity. In such situations comparisons of the phytochemical profiles as an indicator of important constituents can act as a shortcut for identifying biologically active constituents.

DNA fingerprinting is another technique, which though still in its early years, seems to be of immense potential in identification of medicinal plants, particularly when profiling the genotypic differences (Vasudevan 2004). Apart from identifying these genetic variations, it can also aid in identification of germplasms of important or endangered plants for future cultivation or conservation.

Use of isolated compounds can result in better biological activity due to higher concentrations, but it can also lead to potential side effects e.g. the active constituent conessine isolated from *Holarrhena antidysenterica*, a plant commonly used by Ayurvedic practitioners in the treatment of diarrhoea, was found to be toxic to the central nervous system (CHEMEXCIL 1992). More recent studies have also indicated at reduced biological activity with isolated active constituents compared to crude extracts (Kicklighter *et al.* 2003).

The efficacy of crude extracts may be due to the synergism between the different active constituents that may be present in the extract. **Synergism can lead to better activity as well as decrease in potential toxicity of some individual constituents.** Synergism can be due to the individual action of different constituents present in the extract at multiple target sites/parameters. This was observed in a study conducted by us on the antidiarrhoeal activity of *P. guajava* (unpublished data). It was seen that the decoction of the dried leaves of *P. guajava* showed antidiarrhoeal activity by showing antimicrobial activity against five out of the six bacterial strains tested, *Giardia lamblia* and rotavirus. It inhibited adherence to and invasion of the bacterial pathogens to the epithelial cells. It also inhibited production and action of enterotoxins such as *E. coli* labile toxin and cholera toxin. These results suggested that the different constituents present in the decoction could be individually responsible for the different activities observed against these parameters. Another mechanism by which these constituents can show synergism is by having an additive effect against a single target site/parameter. It was observed that the decoction of *P. guajava* leaves was synergistically more active at a dilution of 1% than at 5% against the bacterial adherence to epithelial cells. This effect could be due to the fact that the ratio of constituents achieved at 1% was more optimal for activity than at 5%.

The modern analytical and isolation methods that are used for screening and isolation of plant constituents are the chromatographic and spectroscopic techniques such as TLC, thin layer electrophoresis, HPLC, nuclear magnetic resonance, HPTLC etc. These techniques have proved very useful in isolation and proper identification of the active constituents in the plant extracts.

It is necessary to devise simple techniques for standardization that can be used by the rural community for identifying plants with good biological activity. Use of a class of compounds, as mentioned earlier, as a surrogate marker is a potential approach which can be used by the communities to identify plants with good biological activity. For example, instead of a single polyphenol, tannins can be used as a surrogate marker, which schoolchildren can estimate easily in their laboratories. This approach has been attempted by us in collaboration with the Foundation for Research in Community Health in their field project at Parinche, Maharashtra. Tannin levels were estimated in aqueous decoctions of five different collections of *P. guajava* leaves and compared them with their respective activities against action of cholera toxin. It was observed that the decoctions with ~10.5mg/ml tannin showed good activity with no further significant increase in activity at higher tannin concentrations. However, below this level the activity was significantly poorer (unpublished data). Hence, 10.5mg/ml tannin level may be taken as a cut-off value for differentiating a *P. guajava* plant with good activity from that with poor activity.

## **CONCLUSIONS**

With the tremendous increase in the global use of medicinal plants, several concerns regarding the efficacy and safety of the herbal medicines have also been raised. Hence it has become necessary to standardize the efficacy and safety measures so as to ensure supply of medicinal plant materials with good quality.

After proper botanical identification, WHO guidelines should be followed for collecting plant material in terms of proper season and climatic conditions, correct plant part, practices that are non-destructive and would prevent contamination from soil, toxic weeds or microbes. Post collection, appropriate processing and storage conditions are required to reduce drying time, detoxification to reduce side effects and to enhance therapeutic value of the plant material and to improve its shelf life.

Preclinical biological screening is important not only for establishing the therapeutic efficacy of the medicinal plants but also to validate their historical utilization by traditional healers and herbalists. This is especially important since the plants may have evolved over a period of time leading to changes in their chemical composition and thus the biological activity. Preclinical studies allow comparison of efficacy of different plants and help in designing of rational drug combinations. Toxicity studies need to be done even if the plants have a history of long usage or do not have any documented toxicity, as they can lead to some unrelated toxicity especially during long term treatment for chronic conditions or when used as food supplements and nutraceuticals.

Phytochemical standardization for identification of the plant material can be carried out by obtaining chemical fingerprint through chromatographic techniques in terms of a known marker compound or through bioassay guided fractionation and/or DNA fingerprinting techniques. Chromatographic and spectroscopic techniques have proved very useful in isolation and proper identification of active constituents in the plant extracts.

Though the pharmaceutical industry has been focusing on standardization of plant materials when manufacturing herbal drugs, it is generally believed that standardization is not required when used by rural community for their primary health care. However, irrespective of whether the plant is being used by the industry or by the rural community standardization of plant material is required right from collection of the plant species to the formulation of the herbal drug. It is necessary so that it minimizes batch-to-batch variation and meets standards of quality, safety, and efficacy.

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## **ROLE OF TRADITIONAL MEDICINE IN PROMOTING WELLBEING (VIEW FROM GRASSROOTS)**

**SARITA SHRESTHA, DEVI MA KUNJA, NEPAL**

**Nepal** is a beautiful landlocked country with a complex geography having several layers of high rocky, snowy mountains and rocky deserts like Manang Mustang etc .It has both positive and negative impact in the development of the country. One of the major cause of difficulty of road construction and other developmental construction is due to this geographical complexity .On the other hand it has made the country known in the world through Mount Everest the highest peak of the world and rich biodiversity with wonderful rare flora and fauna. Hence we all know that Nepal is rich in bio-diversity and natural resources. It covers 2% of global diversity in 0.1% of global land but they have been used minimally for the benefit of the people and the country.

This country is also known for the wide range of medicinal plants. More than 1400 ayurvedic plants have been identified which have been used by ayurvedic and traditional practitioners for thousand of years. Beside this there is a large ethnic group who also use herbs for the management of simple health conditions like cold, fever, diarrhea, bleeding conditions etc.

The role of Government in Nepal to promote Ayurveda Medicine and traditional medicine is not very encouraging in health system though this lies on main health system and used to be a major health system. Even at present more than 80% of rural population depends in traditional medicine in different mode and forms. There is no other choice to people in remote villages beside this due to lack of road access. In fact none of basic needful things are available in these places.

In fact Ayurveda and traditional medicine is heritage of Nepal and still many people live with it. Their life style itself reflects it. Most of people of old generation are good resource of information of herbs in both nomenclature and uses. When there is a cut/wound or some other ailments they first use local herbs or go to the local healers as it is too far for them to reach health centre/ hospital or doctor .In such context if these people are well trained about the use of herbs with the reference of classical or research information , they will know how, where, when to refer to proper health care centers if the case is beyond their knowledge and skills would made rural health very effective. Thus it can fulfill the aim of health for all .This approach of primary health care must be promoted by every government in developing countries like Nepal. It is very suitable and needed to be implemented in Nepal. As this country is an agricultural country where abundant of herbal resources as well as knowledge is still living in practice.

**Devi Ma Kunja** a non profit organization established in 2003 with the effort of five enthusiasts women with the motto of " let us do something good for rural health with Ayurveda".Witht this aim **Devi Ma Ayurveda Rural hospital (DMAR hospital)** with five observation beds and very simple set up is started. Three Ayurveda doctors and four other staffs are of this rural hospital are providing health care since then. Special focus is given in women's health in Sipadole village Bhaktpur. Which is merely 23 km(east south) far from Kathmandu.Even though this is so close to Kathmandu, the kingdom of Nepal still

so remote .This village is a window view the of other remote villages of Nepal.

**At present it is providing these services:**

- General health check up and treatment.
- Natural Child birthing with very little interference and need full assistance. (Since last one year government has launched the program of providing 1000 rupees to couple who come to health centre for child birth .It has made child birth in DMAR Hospital not possible as it can not provide money to couple)
- **Advocating** education to both genders. Providing scholarship to two persons for last 4 yrs at the school level and Ayurveda graduation level
- **Encouraging** collection of local wild herbs for hospital use as well as for themselves.
- **Encouraging** for plantation and farming of herbs for income generation and market exploration as well as for hospital uses.
- **Maintaining** ecology through conservation and plantation of endangered plants.
- **Health awareness** program to community people and children.
- **Awareness** program through teachings about the value of green (herbs and plants) in health promotion and their relation in maintaining ecological balance.

Hope this simple little effort can bring positive change in sipadole village like it had brought and also in the other parts of country....

Thank you.

**FOLK HEALING PRACTICES OF KERALA**  
**(Causes of decline - an analysis on the basis of history)**  
**DEEPA CHANDRAN, KSSP, INDIA**

Kerala has a very distinct and rich folk culture. This is a result of unique cultural and social history of this region. Kerala has always been liberal to alien cultures and religions than any other regions of India. Because of this and the geographical peculiarities, Kerala had more close relations with distant places like Egypt and Iran than with other parts of India. The customs, habits and culture of Kerala were unique due to these exotic influences.

Folk healing practices of this region also had its own peculiarities. The valuable knowledge of local herbal wealth was the most important part of this healing tradition. The medicinal substances, brought from far away lands were also used. These practices were a part of the positive attitude towards health. They evolved through centuries, as a result of continuous interaction of different factors that influenced the development of culture and social system of a particular society. The folk practices, (not only medical) were once an integral part of our day-to-day life and culture. They were improved on the basis of everyday life practical knowledge and changing customs and socioeconomic relations of the society. They were inseparably related to the customs, traditions and beliefs of the concerned society.

Every community had its own unique set of medical practices and methods for improving the quality of life. Still they had a wider perspective about the world around them and the philosophic outlook about the relationship between man and nature. They are very much sensitive to the customs and culture of the region because they developed along with those customs and culture. This makes them a live link to the past.

The organic relationship of the folk practices with the sociological development of the community is lost in the process of development. The folk practices are no more a part of the lifestyle of the society. But they remain in some hamlets through isolated individuals who practice them. Yet it can be said that the normal development process of the folk practices is lost. Most of the time the practices are not documented and the knowledge are lost with the death of the person who practiced it. This leads to the loss of a valuable set of knowledge, which was the result of perhaps centuries of social and cultural development of the particular region. That means a very vibrant and valuable link to our past is lost due to our negligence. Even the death of a grand mother who practiced household remedies buries a lot of knowledge deep into the remnants of the past.

The loss of the folk healing practices not only result in the degeneration of valuable intellectual property of the community which preserved it through centuries for generations to come, but endanger the preservation and protection of the bio-diversity. The cheap and cost effective treatment available in the locality using locally available herbs is no more available. This leads to increase in medical expenditure of the poor and greater dependency on modern medical system. Studying the factors that led to the decline of local healing practices is a major part of any attempt to preserve them and protect the rights of the people who

traditionally practiced them.

Major reasons for the decline can be classified as ancient causes and recent causes. The factors in the ancient history that affected the social acceptance of folk healing practices comes under Ancient causes and the factors in the recent history that led to the present state of near extinction of folk healing practices are the recent causes.

## **ANCIENT CAUSES**

From the evidences derived from the ancient Tamil literature, it can be assumed that the social, economic, and cultural development of Kerala started as early as 3rd century BC. Even if there was constant movement, part of the moving population got settled during this process. These settlements were units of agricultural production. But they cannot be considered as isolated and self-sufficient entities. They had social and cultural and trade relations with distant villages. So it can be said that unit of production was an area more extensive than a village. These settlements developed into more complex societies based on work division and production relations slowly over the centuries. They had their own production techniques, farmers, land owners, carpenters, black smiths and of course, healers.

The medical customs developed along with the customs and culture of that particular area. At the same time due to the constant movement and interactions within and out side each production unit; they imbibed knowledge from distant places also. As early as 10th century, our markets used medicines as a commodity for transactions. Temples, which once were among the most important social institutions, had different sub institutions connected to them. Some of them where for dispersal of knowledge, while some others were for providing services like health care. With the expansion of trade relations this link extended to North India and countries like China Arabia and Egypt. Later when codified knowledge of Ayurveda came to Kerala there already existed a civilisation that was capable enough not only in absorbing the new knowledge but also in making some contributions to it.

This influence led to the dispersal of codified knowledge in the lower strata of society, which already practiced folk medicine. As a result some part of the codified knowledge was absorbed to become a part of the folk practice. And practices in the folk culture were appropriated in to the theorized system of knowledge during course of time. The codified and folk practices as extant at present cannot be taken apart from each other. A local child health practitioner with little knowledge of Sanskrit may use exotic raw materials originate in the Himalayas for his medicines. And a practitioner of the codified system may be using treatment procedures and formulations that are not mentioned in the Sanskrit texts.

Local traditions developed as ecosystem and culture specific systems having universal out look and wide interactions. At the same time they were very focused in area of practice. For example, there were people who exclusively treated boils. Like this we had and still have bonesetters, poison healers, birth attendants and healers for specific conditions like child hood diseases, eye diseases, jaundice etc.

They mainly used herbal drugs available in the neighborhood and later on, the medicines available in the market as a result of trade relations with distant lands.

By the time Malayalam developed as an independent language after 10th century through 18th century, Sanskrit had established its hegemony as the language of ruling class, language of knowledge and language of superiority. The codified and folk practices existed side by side for centuries. They had interactions and exchanges that enriched both. The result of these interactions can be evidently seen in the Kerala system of Ayurveda, where the locally available herbs are used and special types of massages and therapies are practiced.

But as time went on, a silent change was happening in the socio-cultural relations of these two. People who practiced the theorized or codified system were considered superior to those who practiced the folk methods of healing. A number of factors already discussed here contributed to this change. Lower caste people practiced medicine that was crude and un-theorized in form. On the other hand people of upper caste practiced the pure, codified and Sanskritized version. The upper castes that evidently had a monopoly of Sanskrit language were considered elite and their practices were also glorified. Folk healers' practice was often much focused. This made their practice appeared lacking in universal applicability. People who practiced folk methods were often illiterates, women, untouchables and other out castes as a part of their traditional vocation that was considered inferior in the society.

Despite these adverse factors the folk practices remained very live through centuries. The main reason for this was the fact that they were in continuous interaction with different factors that influenced the development of culture and social system of that particular society. The folk practices, remained an integral part of our day-to-day life and culture. They were inseparably related to the customs, traditions and beliefs of the concerned society. As a result, in Kerala the art of healing was not a monopoly of the upper castes- it transcended caste and religious barriers.

## **RECENT CAUSES**

In colonial India, the British introduced western medicine as a cultural, intellectual and political tool for supremacy. While western medicine was provided with all the infrastructures and legal support, indigenous medicine was deemed unscientific and illegal and hence inferior. The only reason for not banning the practice of indigenous medicine was the infrastructural insufficiency of the infrastructures of the western system at that time.

Apart from the loss of patronage that sustained indigenous medicine, there were internal factors that hastened the process of decay: stagnation of knowledge, ignorance of the practitioners, and non-availability of quality medicine were the main reasons.

There were no substantial efforts to improve upon the classical texts through experimentation and by relating knowledge to new experience. It remained indifferent to the ecological and social changes that occurred after the composition of these texts, and hence its method of treatment lost touch with reality.

Even this knowledge, the contemporary practitioners did not imbibe sufficiently. The classical texts were either not easily available, or, if available, most practitioners did not have the necessary language skills to assimilate their contents. The texts in vernacular languages were also not made adequate use of. As a result of the social changes that came about, the gurukula method of teaching was not effectively carried out even in practicing families. The lack of specific standards for the preparation of medicines and raw materials was also a problem.

Even though the stagnation and decline of the indigenous system can be traced to the ancient period, what happened during the colonial period was qualitatively different. The indigenous systems faced the possibility of imminent extinction. The movement for the revitalization of the indigenous medicine emerged in the context of this possibility. It was a part of the quest to defend the Indian culture and knowledge from the colonial culture and knowledge.

The main concerns of the revitalization was three issues

- The retrieval, systematization, and dissemination of knowledge
- The creation of institutional facilities for training physicians
- The preparation and distribution of medicine

Professionalization was inherent to these motives. There was an essentially elitist character to this movement. The return to texts at the expense of customary or local practice was the technique of creating intellectual equivalence. Thus the immediate victims of the reformers were practitioners of unsystematic folk medicine, often midwives and other women and illiterates and lower caste people. The movement inevitably marginalized a large number of popular practitioners who were not literate and had no textual knowledge. The quest to create a body of knowledgeable physicians was adverse to this group, as they, in comparison were deemed untrained and unqualified.

All these factors together with the change in the education system and social relations made the decline of the folk practices more acute. Lack of awareness among the younger generations and changes in the life style contributed to the decline.

Preserving local health practices helps in protecting the knowledge of the society, which provided low cost and effective treatment for the locally prevalent diseases for centuries. The knowledge of the medicinal properties of the flora of a locality will also help in the preservation of the bio diversity. Study of the history and acknowledging the contribution of the local healers will take us a long way in achieving this goal.

## **ACTIVITIES OF DALIT BANGLADESH**

### **PROVOSH DAS & SHIB DAS, DALIT BANGLADESH**

Dalit is a Bengali word which means oppressed, exploited, neglected and deprived. Literally, dalit means someone trampled under the feet of someone else. Here in the Indian sub continent, because of the caste system, but not only, different groups of people are called dalit. They are socially neglected, marginalized, oppressed and deprived of human rights. Dalits are also known as outcaste and untouchables. They have little social recognition, dignity or rights and very rarely have access to health, education or to opportunities that are offered and available to any other group within the nation.

**Organization background :** The organization took the name Dalit to represent the Dalit-Rishi and untouchables communities. Dalit was registered under the NGO Affairs Bureau in the year 1998. The founder and visionary-dreamer of Dalit is Fr. Riccardo Tobanelli, who with other Xaverians and some young educated people of the Rishi community enabled the Rishi to establish themselves as a NGO. Now the NGO is led by a group of young Dalits.

For so long we Dalit-Rishi have been patronized, oppressed and kept on the margin of society. Some NGOs have used us a 'magic word' to mobilize resources for development but they have continued to patronize us, despise us and employ us only in low status jobs. Through Dalit we are no longer just the problem but also the solution. 'Amrao Manush' 'We are also human persons': we can define our needs, face them and find a way to solve them. Along this journey we are gaining skills, a better level of income and moreover we are becoming author-subjects of our development. This is our dream: to fight for self-respect, dignity and human rights.

**Goal:** Dalit's aim is to improve the socio-economic condition and social position of the Rishi community through education, health and income generation activities.

#### **DALIT'S BASIC PROGRAMS:**

**Education:** It includes running schools in the Dalit villages to support for students attending college and university. A special effort is taken to keep young girls at school in order to avoid underage marriages.

**Environment and safe water supply :** This program deals with the problem of the presence of arsenic in the underground water. It also deals contamination of water in general in the rural areas, It also provides sanitation and knowledge of how to dispose waste.

**Handicraft program:** This program teaches skills in embroidery, in making goods with straw, jute and cloth. This skills and the marketing of the goods allow some divorced or abandoned woman to have an income and become self-reliant.

**Primary Health Care(PHC) :** This program is geared towards providing basic medical services to all. We also train our teachers and health workers to disseminate information and skills for preventive medicine.

## **PRIMARY HEALTH CARE (PHC) ACTIVITIES & TRADITIONAL MEDICINE:**

- to aware the preventing and curative health.
- to aware the outcaste male and female of the area including the adolescents to offering them complete knowledge on health rights and HIV/AIDS.
- to workshop and conference with village Traditional Healers (Kabiraj).
- to aware on traditional medicine(TM)garden in the village and how to use TM plants.
- to make aware the primary, secondary and collage students about TM medicine.
- we have got 10 TM gardens in different villages.
- some ayurvedic production in our hospital as a Cameghashar, Neem medicated oil, Basabaleshyam, Triphaladi kath, Situpaladi churna, Hingatak churna, Shukada churna, Draka-Rista, NFP churna and Pinda tailam.

## **ORIGIN AND DEVELOPMENT OF UNANI MEDICINE**

### **DR. SYED SAIFUDDIN KHALID, UNANI MEDICAL COLLEGE BANGALORE, INDIA**

The Unani System of Medicine originated from Greece. Greek philosophy was the basis for it. Hippocrates (460-377 BC) freed medicine from the clutches of superstitions and gave it the status of science. Galen (131-210 ad) stabilized its foundation, on which Arab and Persian physicians like Rhazes (850-925 ad) constructed an imposing edifice. The Greek and Roman literature was translated into Arabic and Persian language and reviewed during the time of renaissance; the Muslim rulers extended their patronage and propagated it during Bani-Ummaiah and Abbasia period; but they preferred to keep its identity as 'Unani Medicine' only. As this medical system was brought up under the umbrella of Islamic heritage; western historians named it as 'Islamic medicine'.

In India Unani system of medicine was introduced by Arabs and Persians. The Delhi sultans, the Khiljis. The Tughlaqs and the Mughal emperors extended patronage to this noble system of medicine and benefited the masses with the efficacies enriched with it. The 13th & 17th century span was the golden era for Unani medicine in India. Akber Arzani, Ali Geelani, and Hakeem Alvi Khan were the valuable contributors for this system of medicine of that era. The system immediate favor with the masses and soon spread all over the country and continued to hold an unchallenged sway for a long period even after the downfall of Mughal empire.

In British regime Unani medicine suffered a setback due to withdrawal of government patronage. But since the system enjoyed the faith among the masses it continued to flourish. The efforts of Sharifi family in Delhi, Azezi family in Lucknow, and Nizams in Hyderabad uplifted the glory of the system to the fullest. Hakeem Ajmal Khan (1868-1927) championed the cause of the system in India. The Hindustani Dawakhani and the Ayurvedic and Unani Tibbia college in Delhi are the two living examples of his immense contributions to the multi pronged development of the two Indian systems of medicine, Unani medicine and Ayurveda.

### **FUNDAMENTALS**

Hippocrates enunciated that 'health' is a birth gift from nature disease is a natural process and symptoms are the reaction of the body to the disease. 'Tabiyat' (medicatrix naturae) is the supreme authoritative faculty of our body responsible to maintain health. And

Any thing wrong with it amounts to disorders; and all the therapeutic efforts exercised are only to boost it to regain its vigor.

Tibb-e-Unani presupposes that, the primary fluids of the body are composed with four humours-'dam' (blood), 'balgham' (phlegm), 'safra' (bile), and 'salmat' (black bile). They co-exist in the body with a definite ratio and proportion, quantitatively and qualitatively; and maintain a homogenous balance in the body to evolve the state of health they are the sources of nutrients to the respective organs under

their influence. They are with assigned temperaments- i.e. blood , 'hot moist Phlegm , 'cold & moist'; yellow bile , 'hot & dry'; and black bile 'cold & dry'.

Normally ,these humours vary in their ratio and proportion from age to age, gender to gender, region to region, and seasons depending on their influences , the human temperament is expressed in the terms 'sanguinous (inclined towards blood), 'phlegmatic '(inclined towards phlegm), 'choleric' (inclined towards bile) and tmelencholict (inclined towards black bile).

## **DIAGNOSIS**

Another distinctive feature of Unani Tibb is its emphasis on diagnosing a disease through 1nabzi(pulse), a rhythmic expansion of arteries which is felt by fingers. In this, stroke of pulse, its longitudinal, vertical and horizontal expansion or contraction , rhythm, character, synonymy and variation in classic manner are accounted for diagnosis. Examination of urine and stool in classical way are other modes of diagnosis in Tibb-e-Unani.

## **PRESERVATION OF HEALTH & PREVENTION OF DISEASE**

Tibb -e-Unani believes that the restoration of equilibrium of various elements and faculties of the human body depends on six essential factors called Asbab-e-Sitta-e-Zarooriya ', which are:

- Atmospheric air
- Foods and beverages
- Bodily movements and repose
- Psychic movements and repose
- Sleep and wakefulness
- Retention and depletion

They are called essential for the reason that 1f any one is with drawl life is at risk, sooner or later, and their adequate supply only will ensure health any derangement in their adequacy will lead to disorders.

## **THERAPEUTICS**

In Unani medicine various types of therapies are employed. They are:

- Ilaj -Bid --Dava (pharmacotherapy) herbal, mineral and drugs of animal origin.
- Ilaj -Bit -Tadbeer (regimental therapy)
- Jarahat Surgery )
- Regimental therapy includes venesection . Cupping, diaphoresis, dieresis, turkish bath, massage, cauterization, purging, emesis, exercise, and leeching.

In Unani medicine, single drugs, or their combinations in raw form are preferred over compound formulations. Drugs are easily available , and its formulations are free from side effects and act as immunomodulators beside their combative function on disease causing factors.

The temperament of the individual , the temperament of the disease and the

temperament of the season are considered before prescribing drugs, and drugs of the same intensity with contradictory qualities are advocated to neutralize the ill effects. i.e. Cold disorders are treated with hot temperamental drugs and vice-versa.

The development of Unani medicine and other Indian medicine wings gained momentum after independence of the country. Ayurveda and Unani were considered as native assets deserved to gain significance.

The Govr. of India established a central council for research in Indian medicine and homeopathy (CCRIMH) in the year 1969 to develop scientific research in these systems of medicines.

In 1978 it was split up into four separate research councils each for Ayurveda, Unani, Homeopathy and Siddha. With this welcoming development CCRUM began functioning independently to cater the needs of research and evaluation in Unani Tibb.

Further in 1970, the central council of Indian medicine was set up as an autonomous apex body under ministry of health and FP Govt. of India to monitor the educational and academic requirements of Ayurveda, Unani and Siddha system of medicine, which has brought uniformity in nomenclatures of qualifications through out the country both at UG and PG levels. Syllabi, curriculums and modalities of teaching were evolved to standardize education in these systems of medicine.

The Govt. of India is providing adequate patronage to Unani system along with others to draw the fullest advantage of these systems in health care delivery to the masses in attaining the cherished goal of 'health for all'.

In 1995 , a full fledged ISM & H Department was set up in the union Ministry of Health & Family Welfare services. With this ,the pace of development of Unani and others has accelerated.

## **RESEARCH IN UNANI MEDICINE & THE CCRUM**

The concept of research in Unani medicine was perceived by Maseehul Mulk Hakeem Ajmal Khan in 1920. His impulsive nature spotted dr. Saleemuddin Siddiqi to engage with research. Dr. Siddiqi has discovered the unique efficacy of a plant by name 'Asrol' Raulfia Serpentina in hypertension and other neuro vascular disorders.

The formation of CCRUM was a shot in the arm for the pioneers of Unani medicine in India. It started functioning from 1979. Its research programme consists of:

- Clinical research
- Drug research
- Survey and cultivation of medicinal plants.
- Literary research
- Family welfare research.

It is funded by the Govt. of India and research activities of this are being carried out through a network of 24 Institutes/Units functioning in various parts of the country. During 22 years of its existence, the council has made significant strides in its research programs the council is making efforts to scientifically establish the therapeutic efficacy of various Unani drugs which have been in use of Unani physicians for centuries. Clinical trials are being conducted in vitiligo, eczema, psoriasis, infective hepatitis, urolithiasis, peptic ulcer, chronic diarrhea, infantile diarrhea, helminthiasis, malaria, amoebic dysentery, kala azar, filariasis. Diabetes mellitus, rheumatoid arthrms, sin usitis, bronchial asthma, leucorrhoea, and hyperlipidemia. The council has developed potential drugs for the treatment of some diseases on national priority such as malaria, filariasis, infective hepatitis and infantile diarrhoeas.

Research on fundamental aspects of Unani Tibb is in progress in CRIUM Hyderabad to scientifically evaluate the concepts of humours and temperaments.

The Council has been able to finalize the standards of 212 single drugs and 385 compound formulations. This has been published in three parts as standardization of single drugs in Unani medicine I. It has also published a book titled “ Chemistry of Unani medicinal plants”. The Council is actively involved in ethnobotanical surveys in remote forest zones and in tribal areas collecting over 47,656 botanical specimens in about 144 taxa of medicinal plants.

## **HEALTH CARE**

Unani medicine is quite popular among masses. There are 42,445 registered Unani medical practitioners in the country beside a large number of unregistered practitioners who practice Unani medicine on hereditary basis.

## **EDUCATION IN UNANI MEDICINE**

Right now there are 37 under graduate and 8 post graduate colleges in the country. Bums degree is being awarded through out the country from various universities for UGs; and MD , a three years post graduate degree course in various faculties like Moalejat (medicine), Advia (pharmacology), Niswan-o-Atfal(obst gynae), Hifzan-eSsehat(community medicine), Jarahat (surgery), Kuliyyat-Etibb(fundamentals) is being conducted at various centres.

Beside the historical Ayurvedic Unani Tibbia college, Karol Bagh New Delhi , Ajmal Khan Tibbia college AMU, Aligarh; Nizamia Tibbia college, Charminar, Hyderabad, Govt. Unani Medical College Bangalore is gaining prominence on national map in the pathway of development. It has got full fledged 14 departments with adequate teaching staff and infra structure. It has been granted the status of college of excellence; and introduction of PG courses is on the way

## **ON INTERNATIONAL LEVEL**

Unani degree holder can now practice in UAE. As a result of increasing demand and interest in the use of traditional complimentary and alternative medicine (TCAM) therapies in medical practices the UAE Ministry of Health has permitted

graduates of alternate medicine to practice traditional medicine in their country after under going a prescribed exam conducted by their Ministry. Unani Tibb is becoming popular in USA, UK, South Africa, Kuwait, Australia, Canada, Germany, Middle East and Far Eastern countries .

Thank you

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# IMPORTANCE OF PALM LEAF LITERATURE COLLECTION REGARDING AYURVEDIC MEDICINES IN REGIONAL LANGUAGES

MR. LAKSHMI NARAYAN, INDIA<sup>15</sup>

The current world wide trend to utilize natural plant remedies has created a need to collect information about the therapeutical properties of plants. People believe that, the natural medicines are safe and are more dependable than the synthetic medicines. In India the use of plants as medicines dates back to Vedic Age. Ayurveda is a branch of *Atharva Veda*. We can find thousands of medicinal plants mentioned in ayurvedic classical texts which were used against variety of ailments in form of powders, extracts, decoctions etc.

However among several thousand Medicinal plants mentioned in Ayurvedic texts only a few hundred plants are identified and the identification of 300 to 400 plants are confirmed. In Ayurvedic classical texts the names all the plants are in Sanskrit and most of them are yet to be identified. Many of the Ayurvedic Sanskrit classical texts translated to regional languages (Kannnada, Tamil, Telugu, Malayalam, Gujarat etc.) are still on palm leaves. All such palm leaf books are century old and are in a perishable condition due to negligence, normal wear and tare etc. In all these books there will be Sanskrit *slokas* regarding medicines with explanations in the regional language. In such books we can find the Sanskrit names of medicinal plants with regional names. Study of these palm leaf books may help to identify many of the medicinal plants which are not yet identified.

Hence, this is the right time to collect such unpublished palm leaf books and to record the contents before they are lost. I have seen a number of palm leaf books with local vaidyas and recorded the contents; a few of them are '*Roma Rishi Eka Moolike Vaidyam*', '*Mahamantravadi sridhara deva virachita vaidya sastram*' and '*veera bhatti vaidya sastram*'.

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<sup>15</sup> Mr. Narayan, was unable to participate in the meeting due to personal reasons. However he did submit his abstract for the meeting. He works at NIMHANS, Bangalore. Collecting palm leaf manuscripts is his passion.

**CONTRIBUTION OF AYURVEDA IN ACHIEVING TOTAL  
HEALTH IN THE COMMUNITY  
DR.JAYASHREE K. S., GOVERNMENT AYURVEDA MEDICAL  
COLLEGE, BANGALORE, INDIA**

Ayurveda is the most ancient medical science of the world having evolved about 5000B.C. that has the basis of Hindu philosophy. The science has many concepts in all the aspects of the science which are relevant even today.

Indian thought about the health was never a an individual oriented instead it has the focus the whole community not belonging to one part of the globe or locality. 'Vasudhaiva kutumbukam" which means the whole world is one single family and hence 'sarve janah sukhino bhavantu sarve santhu niramahaha,' refers to the well being of every individual without any suffering. To achieve goal the health focus cannot be on one physiological system of one individual or one family. It is the total health achievement inclusive of spiritual, social and mental health in addition to the physical health.

Ayurveda as the very nomenclature means is not a system of medicine. On other hand it is the science which promotes the knowledge about what is beneficial to the body and which is not beneficial at what proportion thus promoting complete health. Ayurved is defined as the science which promotes knowledge about the life.

Ayurveda has the two main objectives as follows-

- ❖ Svasthasya svasthya rakshanam- maintenance of health in healthy people,
- ❖ Athurasya roganuth- Alleviating the diseases in the patients.

The first priority is to promote health and maintaining health hence the life style is given the main focus in achieving health.

Total health can be achieved by following the righteous life style. What has become a recent realization that the major number of diseases can be reversed, modified, prevented by the proper lifestyle was well known to Ayurvedic physicians. Thus under life style there is a holistic approach which includes-  
Dina charya- Regimen to be followed during the day that covers oral hygiene, regulation in excretory functions, balancing the nutrition, improving physical stress endurances.. Ritu chrya- keeping in mind the influence of seasonal variations and their impact on the human system, and In order to prevent the diseases occurring due to seasonal influence the suitable alterations in the life style to be made are discussed unser the Ritu charya. Finally and most importantly the mental heath through adaptation of proper code of conduct which influences not only the individual's mental health also bring the community health and spiritual health.

Thousands of years earlier itself Ayurveda has identified the eight branches of specialties namely Ashtangas(eight branches) which are as follows-

1. Kayachikithsa-compared with general medicine,
2. Kaumarabhruthya-paediatrics,
3. Graha chikithsa- psychiatry,
4. shalya chikithsa-surgery,

5. Shalakyā chikithsā-Eye, ear, nose, Throat and Dentistry,
6. Visha chikithsā- poisons, poisonous bites, and remedial measures,
7. Jara chikithsā-Geriatrics,
8. Vrusha chikithsā- Sexology with virilificatory therapeutics.

This emphasizes the standard approach our ancients had in the field of medicine.

This science of life is very nearer to the nature because the philosophy of Ayurveda is “Nature nurtures us if we nurture it” thus the basic concept upheld is Loka purusha samya vada ie what ever the principles found in the universe are also found in the body also. Hence the deficits occurring in the body is rectified by utilizing the naturally available resources. While utilizing this, the preceptors of Ayurveda were able to appreciate that everything available in this universe has a medicinal value if used skillfully.

In the management of the diseases, the preliminary focus of the physician will be to rectify the Agni –a factor which is responsible for the conversion, transformation of the food into an assimilable, acceptable, factor to the body. It is strongly and widely accepted by the physicians of Ayurveda that all the diseases are caused by the impairment of this factor. Hence initially this is rectified and then the other factors in a diseased state are attended to.

Ayurveda is the only system that has a well established concept of cleansing the body to remove the morbid factors those can be compared with the free radicals, toxins, waste materials etc.. Through the Panchakarma (five therapeutic measures) that eliminate the unwanted materials through the natural apertures used in the normal course. This is achieved through inducing vaman-Vomiting, Virechana-purgation, Basthi-medicated rectal administration of medicines, Nasya-Trans nasal administration of medicine, Raktha mokshana-blood letting through application of leech or other methods. These procedures are adapted in the healthy individuals seasonally in order to prevent season specific diseases as well as to maintain the health. The same procedures are also adapted as therapeutic one in the management of diseases.

Ayurveda has also developed some very special techniques and are very effective even today. Few to quote are-

- KASHARASUTRA-medicated thread used for cutting the sinus, fistulae etc, which prevents recurring of these conditions.
- RAKTHA MOKSHANA-Blood letting Apart from the three doshas the fourth one the blood is also considered as dosha .the vitiation of blood, can give rise to various conditions and these as well as the major varieties of skin affections are treated with bloodletting therapy. Among the various methods leech application is also one.
- AGNIKARMA-cauterization was another well established tool in the treatment of neoplasm. It was well appreciated that the cauterization followed by surgery the recurrence is prevented.
- BHAGNACHIKITSA-bone setting is an art and is even today practiced in various part of the country by native vaidya. The medicinal application used during the management is well appreciated by the orthopedic surgeons also.

- VRANOPACHARA-management of wound is another area where in Ayurvedic scholars have achieved expertise. Depending upon the nature, area, type of wound, tissue affected specific remedies are advocated.

Women health was given prime importance in the health practices. Life cycle approach which is a new thought in the field of medicine was adapted about thousands of years ago. The important role played by women are acknowledged and it is said that whatever may be the case , women health need to be protected by adapting all possible measures without compromising because women is the root cause for progeny and if she is protected she in turn will protect the whole family and then the community.

Thus right from the beginning the girl child is cared. At the onset of puberty the girl is administered with special types of foods and also of certain medicines for the better development and growth of the reproductive as well as the whole system. The care during pregnancy –Garbhini charya focuses on both mother and the child. Simple formulations of herbs to be used regularly during certain part of pregnancy, is advocated. During labour, during lactating period, and during menstrual period and further during geriatric period both prophylactic and therapeutic measures are planned and advocated. Which emphasizes the Ayurveda approach is holistic and also life cycle approach.

In paediatric care is another specialized area in Ayurveda. Knowing the intricate interrelation between gynecology, midwifery, obstetrics Ayurvedic saints have identified Kaumarabhruthya as one of the eight branches. The care starts with the child so as to make him or her to be a better parent and the parent to propagate for a healthier and better generation. Ayurveda also has promising results in the management of cerebral palsy, mentally challenged children, malnutrition etc..

In spite of all these virtues there are many challenges Ayurveda need to face, equip itself to be in the front line:

- Ayurveda has to enter the national health programmes
- Prevention, as therapeutic modalities for HIV-AIDS, Viral hepatitis, Diabetes, etc.
- Therapeutic of add on therapeutic modalities in the management of malignancy,
- To improve the treatment for the evidence, suitable, appropriate research methodologies had to developed.
- Monitoring the innumerable and indiscriminate formulations,
- Measures to have sustainable supply of med plants.
- Monitoring, reporting ADRs if observed with the use of Ayurvedic medicines.
- Establishing inter-disciplinary approach.
- Better education strategies

#### Ayurveda at community level

- Training programmes for-
- Propagation of Ayurveda,
- Prakruthi typing,

- Guidelines for better life style,
- Suitable regimen during diseases state,
- Use of simple home remedies,
- Detection of changes in the body.
- Knowledge about the method of preparation of simple specific dietary recipes,
- Specific food practices during various phases of life namely Child hood, after menarche, pregnancy, lactation, menopausal phase, geriatric phase of life.
- Season specific life style,
- Management of chronic diseases.
- First aid
- Raising home gardens.

With the original acceptable principles Ayurveda can be the future science of health in the world. This can be achieved only when the principles are understood without mimicking the other systems , with proper documentation.

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