Biodiversity

North East India Perspectives

Proceedings of the Workshop on Peoples' Participation in Biodiversity Conservation

4 – 6 March 1999

Organized by

North Eastern Biodiversity Research Cell,
North Eastern Hill University, Shillong 793 003

&

Synjuk Seng Samla Shnong, Shillong

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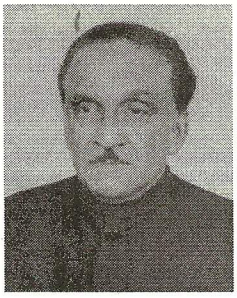

Raj Bhavan
SHILLONG
793 001

March 07, 1999

MESSAGE

It gives me great pleasure to learn that the North-Eastern Biodiversity Research Cell (NEHU) is publishing the proceedings of the recent workshop on "Peoples' Participation in Biodiversity Conservation" held in Shillong.

The north-eastern region is very rich in natural resources. It is globally recognized as a megabiodiversity area as it is one of the richest reservoirs of genetic diversity of plants, animals and microbes. The biodiversity of the region is under serious threat due to wanton felling of forest trees for shifting cultivation and to meet the demand for timber and fuel wood, urbanization, construction of roads, bridges and dams and other forms of exploitation of biological and mineral resources. This raises serious issues of sustainability of use, environmental degradation and stress on biological resources.

I think peoples' active participation can go a long way in conserving our rich biodiversity - for a better tomorrow. People must realise that life on earth will perish if they do not take pragmatic steps in order to save biodiversity.

I hope the efforts of the North-Eastern Biodiversity Research Cell (NEHU) and the Synjuk Seng Samla Shnong (SSSS) will be replicated by others to ensure peoples' involvement in the conservation movement.

(M.M.Jacob)
Governor of Meghalaya.

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MESSAGE

I have noted with great satisfaction that the North-Eastern Biodiversity Research Cell at NEHU Shillong has very successfully organized a three day workshop on "Peoples participation in Biodiversity Conservation" in March this year. A large number of distinguished participants have gathered and exchanged their views on various aspects of biodiversity conservation and sustainable development in NE region. I have been informed that the deliberations in the workshop were extremely useful and the major contributions and findings are now being published in the form of a proceeding. I am very sure that such effort will bring out valuable reference material for scientists, environmentalists and planners.

I congratulate the scientists and organizers of NEBRC for bringing out the workshop's proceedings and hope that with their untiring efforts the objectives of the cell will be successfully achieved.

(K.K. DWIVEDI)

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Acknowledgements

I consider it my privilege to thank all those who were instrumental in making this workshop a fruitful one and furthermore, on behalf of the NEBRC, I take this opportunity to briefly outline the genesis of this project and give due acknowledgement to those who were instrumental in the establishment of the Cell.

This project funded by the North East Council, Planning Commission, New Delhi was a direct outcome of the Govt. of India recognition of the much-needed thrust on Biodiversity, in line with the global environment conservation scenario. The establishment of the North Eastern Biodiversity Research Cell is a consequence of their intent to promote sustainable development by way of encouraging more Research and Development centres, keeping in view biodiversity conservation concerns. Given the constraints and lack of infrastructure in research and development, the North East needs to be viewed through perspective. Developmental priorities per se should be categorised/identified in consonance with the available resources. Needless to say that with its rich Biodiversity resources, serious attention must be given towards in-depth study of these resources so that they may be used in a sustainable manner to explore, expand, tap and regulate these bio-resources in a sustainable manner.

In this context, the then Secretary of the North Eastern Council, Mr. H. A. D. Sawian, IAS, the present Secretary, Mr. T. Ringu, IAS, Mr. J. M. Syiem, IAS, Planning Adviser, Mr. G. Sen, Financial Adviser and their executives, deserve special mention for facilitating and making this project functional. The NEBRC would also like to particularly acknowledge Mr. Promode Kant, IFS, Chief Conservator of Forests, MoEF and Adviser (E & F) to the NEC, Mr. W. Suting, IFS, Conservator of Forests, MoEF and Dr. V. T. Darlong, Joint Director, MoEF who continually enrich us with their vast experience which will go a long way towards achieving our goals.

We extend our appreciation and gratefulness to the North Eastern Hill University, in particular, the Vice-chancellor, Prof. B. Pakem, for providing us the much-needed support, advice and the various facilities. The Head, Department of Chemistry, Prof. M. K. Mohanty and his colleagues, deserve special thanks for all the support and encouragement. It would be incomplete not to mention Prof. M. S. Swaminathan, Chairman, MSS Research Foundation, Chennai and Prof. T. N. Ananthakrishnan, Director, ERI, Chennai for their support and valuable suggestions in the formative stage of this Project.

To be able to achieve sustainable growth, it is imperative that people at the grassroots level be involved. It is with this view that the NEBRC in its maiden venture organized this workshop jointly with a premiere youth organization of the State. This joint undertaking was done with the view that an approach of this kind will provide a better interface between public and the intellectuals. In this context, I am indeed very grateful to the executive members of the Synjuk Seng Samla Shnong (SSSS), Shillong for their willingness to participate not only in this workshop but also in all our public activities related to Biodiversity awareness. In retrospect, it is due to their involvement that we have been able to reach out, and accepted by a larger grassroots audience within such a short time-span.

I take this opportunity to thank and express my gratitude to all our resource persons from the entire North Eastern States including the different Non-Government Organizations (NGOs), who, through their participation has provided us with a much more broader perspective as well as a more meaningful outlook towards biodiversity. Their contribution to this workshop by way of paper presentations, interactions and discussions will go a long way to provide a Regional focus on Biodiversity concerns.

I am indeed grateful to all the members of various committees, in particular Dr B. S. Khongwir, D.G. Nongkhlaw, C. Syngai, Gordon Tham, Linus Marwein, Larry Warjri, Khraw Kharlukhi, Paul Shanpru, Bull. N, Dr. M. B. syiem, Adamson Khonglam and Jemino Mawthoh, Chairman SSSS for their untiring support and effort throughout the entire workshop proceedings.

I thank the press and the media, in particular, Mr. Sanat Chakraborty and Ms. Linda Chhakchhuak for their enthusiastic participation besides the wide coverage throughout the duration of the Workshop. My appreciation for our own JRFs, Y. S. H. Yobin, I. Thamar, D. Marngar, B. Das, R. Lalfakzuala, Lalmangaihzuala, G. Syngai, R. Nongrum and R. Nongkhlaw and for our own personnel, Mr. Edwin Nongrum, M. Warr and M. Lyngdoh for their cooperation and especially to Ms. M. Kharmudai, Ms. D. Suiam and Mr. D. R. M Buam for all the tedious typing and compilation of the manuscripts.

I take this opportunity on behalf of the Cell, to duly acknowledge and express our special appreciation to Mr. P.R. Mawthoh retired Director, Soil, and ex-Advisor NEC, Chairman, Synjuk Rangbah Shnong and ex-Coordinator Total Literacy Campaign for his ever willing service, effort, advice, support and enthusiasm right from the very initial stages of writing of this project. His advice will go a long way beyond this project to continually inspire us.

I am grateful to all the agencies/departments who have willingly supported this workshop by way of advertisements. I also would like to acknowledge M/S WATERS INDIA LTD. and M/S MILLIPORE INDIA LTD. for their sponsorships of dinners during the workshop.

The resolution adopted in conclusion stems directly from the interaction between all the participants in a special session meant primarily for the purpose. It expresses and reflects the views and concerns *vis-à-vis* Biodiversity Conservation issues in the North East. We sincerely hope that the resolution adopted will provide a better insight and serve as a reference document for other Agencies/Departments to act, and if necessary, legislate upon.

July 1999

D. Syiem
Organizing Secretary

Preface

As an effort to contribute towards Biodiversity Study, Use and Conservation, the North Eastern Biodiversity Research Cell (NEBRC) in collaboration with the Synjuk Seng Samla Shnong, Shillong (SSSS), a federation of youth organizations, had organized a workshop on ***Peoples' Participation in Biodiversity Conservation*** from 4th to 6th March 1999. The workshop aimed to bring people to a single platform to discuss issues pertaining to utilization of natural resources/wealth of the North Eastern region. Participants from all walks of life, which included eminent Foresters, Scientists, Researchers, Herbal Medicine Practitioners, NGOs, Community Workers etc. had deliberated on various issues related to the theme. This compilation of the proceedings is an outcome of the selected papers contributed by these persons. Minor editorial alterations have been made where necessary to maintain conformity and style without changing the subject matter. The papers compiled here cover a variety of subjects, from Peoples' Experience, Indigenous Knowledge Systems, Species Diversity, Use of Medicinal Plants and Threats to Biodiversity. The resolutions emerging from the NGOs' discussion held before conclusion of the workshop have also been included in this compilation. The recommendations arising from the Workshop will be disseminated to policy makers and lawmakers of all the North Eastern States.

It is sincerely hoped that this compilation would provide a vast array of information and development alternatives to various communities and also enlighten them about the need to Conserve, Study and Use Biodiversity resources effectively.

July 1999

B. Kharbuli
Convener

Workshop on *"Peoples' Participation in Biodiversity Conservation"*
4–6 March, 1999, Shillong, Meghalaya, India

MEDICINAL PLANTS AND HERBAL MEDICINE: A CASE STUDY IN MEGHALAYA

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Introduction

Pluralism in health care utilization is now a global reality. With a global population approaching eight billion by the turn of the century, the demand for affordable and locally available medicines must be matched by rapid development of sustainable sources of supply. Utilization of traditional health or herbal medicines is reported to be common amongst 60-80% of the population of non industrialized countries and around 40% of the population of industrialized countries are now using alternative forms of medicine[1]. As per IUCN estimates, the global value of medicinal plants industry is around US$ 800 billion per annum and on the increase[1, 2]. Despite this figure, reportedly, medicinal plant trade has largely been a hidden economy. Some of the activities worldwide related to medicinal plants as shown below are further indications of the magnitude and potentials of this activity.

The Medicinal Plant Scenario

1. As per the WHO report, 60-80% (estimated – 3300 million people) of non-industrialized countries and around 40% of the industrialized nations still utilize traditional systems of health care.
2. IUCN estimates of the global value of medicinal plants/herbal medicine are around $800 billion.
3. The world sale of herbal potions is increasing by about 10-15 % every year.
4. Germany documented 1543 plant species in 223 families that are processed whereas South Africa recorded 500 plants that are traded commercially.
5. Nepal's export on medicinal plant is to the tune of 22-71 million $, this activity being the 3rd largest export article of this small country.
6. European herbal medicine market in 1994 is $ 1.8 billion.
7. One out of every 8 known plant species is threatened with extinction. Report by World Conservation Union.
8. In India, 2000 drugs used are of plant origin.
9. Indian medicinal plant related trade is worth 500 crore and Rs 900 crore worth of herbal medicines are produced annually.
10. As per 1997, World Bank report, revenue earned from export of only crude herbal medicines in 1994-95 was Rs197 crore ($53.2 million).

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* Author for Correspondence

11. In India, over 7000 licensed manufacturers, 16,000 firms supply 55,000 pharmacies and 14,000 herbal dispensaries with plant-based products.
12. 166 companies import crude extract of medicinal and aromatic plants from India. 90% of the plant species used in the industry are collected from the wild.
13. Ayurveda, Siddha and Unani together uses 1200 medicinal plants, and rural communities use over 6000 medicinal plants for treating a variety of ailments.
14. More than 150 of the known species of medicinal plants in India are threatened or endangered.
15. India having 60,439 species of plants documented so far account for 8% of global plant genetic resource.

Awareness of the scale of this trade has however, come about indirectly in that habitats are becoming species-poor as medicinal plant species are over exploited. This scenario is specially true for the North-Eastern States of India in general and in particular the state of Meghalaya.

India, listed amongst the 12 mega-diversity areas in the world has two major biodiversity hot spots. These are the Western Ghats and the Eastern Himalayas of which, the North Eastern Region is part. The country has 60,439 species of plant that have been documented, accounting to more than 8% of the global plant genetic resources[3,4]. North Eastern Region alone has more than 10,278 plant species documented so far, and contributes to more than 17% of the country's genetic resources, and therefore deserves special attention[3]. Unfortunately lack of awareness and foresight, combined with a host of other maladies has resulted in a rapid depletion of this valuable genetic resource. Meghalaya has only 34-40% or so forest cover, with the vast majority of land under private holdings[5]. Although this is within the Government of India directive for the country to achieve 33% forest cover, the nature of land holding and practices coupled to an ineffective and lethargic machinery, poses a serious threat to the biodiversity resource of the State.

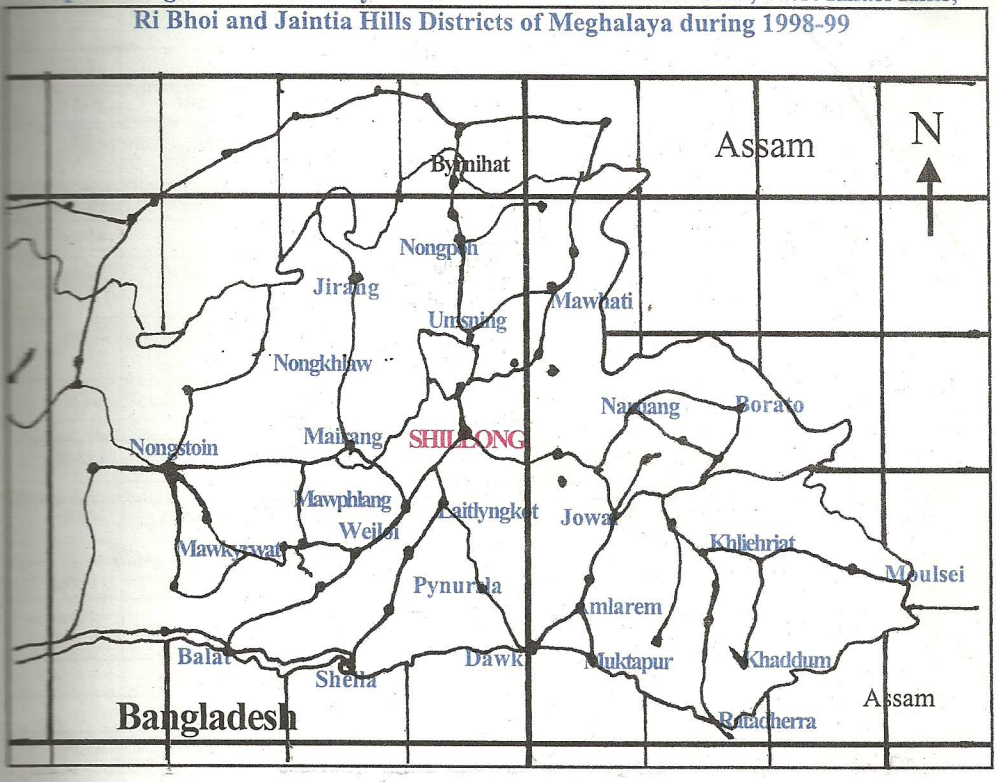
The present scenario, as seen from the perspective of the new developments vis-à-vis World Trade Organisation, amended Patent Act, Trade Related Aspects of Intellectual Property Rights (TRIPS) and the whole gamut of globalization adds another dimension which is bound to have profound impact on medicinal trade[6-10]. With product patenting in the offing, prices of medicines are bound to inflate[11]. It is, therefore, crucial for the North Eastern Region to tap the potentials of these home-made remedies and alternative form of medicine, for they offer not only a cheaper and easily available form of health care, but they are also integral to the social and traditional lifestyle of the people. Nonetheless, some degree of quality control and regulation is necessary. It may be pertinent to mention here, that in America, alternative forms of health care is a growing reality. It is in consonance with this growing need, that, the American Congress established the National Centre for Complementary and Alternative Medicine at a cost of $50 million, in the current year[12].

The Study

A preliminary survey covering 200 herbal practitioners, was conducted on the use of medicinal plants and related activities. Questionnaires and personal interviews were used for information and data collection. This study covered the districts of East Khasi Hills, Jaintia hills, West Khasi Hills and Ri Bhoi (**Fig. I**)

Fig 1

Map showing areas covered by NEBRC team in East Khasi Hills, West Khasi Hills, Ri Bhoi and Jaintia Hills Districts of Meghalaya during 1998-99



Results and Discussions

The study indicated the use of more than 150 species of plants by the herbal practitioners. The plants that have been indentified and their respective prices are as shown in **Table-1.** Reportedly, sone of these plants are threatened in certain localities. Attempts to gauge the volume of trade however, has not been very revealing because there is some degree of reluctance on the part of the respondents to disclose information on trade aspects. Another fact is due to the absence of any effective mechanism to regulate and monitor such trade practices by the authorities concerned. Nonetheless, there is a growing concern among the local practitioners and environmentally conscious citizens, of the rapid rate of species depletion in certain areas.

Albeit, a definite trade activity exists; this study could not gather specifice information on this aspect. Nonetheless, it was observed that certain species notably *Lycopodium sp., Taxus bacatta,* Lichens, *Melia composita* and number of Orchid species are virtually non-existent in certain areas. Sources informed that at least 6-7 truckloads of *Melia composita* are being taken every month at a throwaway price of Rs. 4.00/kg, is indicative of rising trade activity.
The absence of any effective regulatory and monitoring agency has directly or indirectly contributed to this biopiracy and will continue to be responsible for the unrestricted depletion of the State's bio-resources.

TABLE 1

Sl. no.	Name of herbal plant transplanted	Botanical Name	Source of collection	Medicinal value	Rate/unit
1.	Bat iewtung		Sohryngkham	Cancer, skin	185/kg
2.	Philot-Sying baheh		Bhoi	Various ailments	300/kg
3.	Kynbat ksuid	*Acorus calamus*	Sohryngkham	Mental diseases, Pregnancy	35/kg
4.	Tyrkhang khyllai	*Adiantum sp.*	Laitkor	Kidney stones	905/kg
5.	Kynbat piat shyiap	*Allium cepa*	Sohryngkham	Epilepsy	45/kg
6.	Rynsun syntiew heh	*Allium sativum*	Thangsning	Burning pain in the feet	30/kg
7.	Jatyngkhieh	*Aloe vera*	Thangsning	High blood pressure, piles	20/kg
8.	Hadembsein	*Arisaemia jacquenantii*	Ribhoi	Skin disease	
9.	Phan Shynrang	*Aristolochia sp.*	Mawrong, Langkyrdem	Sterility	135/kg
10.	Phan kynthei	*Aristolochia sp.*	Mawrong, Lumshnong	Menstrual ailments	200/kg
11.	Kurthlong kynthei	*Aristolochia sp.*	Thain kyrdem	Liver, stomach	150/kg
12.	Kurthlong shynrang	*Aristolochia cathcartii*	Thain kyrdem, Lumshnong	Liver, stomach	150/kg
13.	Jaiaw	*Artemisia vulgaris*		Antifungal, wounds	
14.	Bat'niangsohpet	*Asparagus filcinus*		Indigestion, gripe	
15.	Jajew khapmaw	*Begonia peltata*	Sohryngkham	Fever & stomach troubles	55/kg
16.	Sohkrot shiah	*Berberis sp.*	Lumphyrnai, Sohryngkham	Stomach troubles	20/kg
17.	Soh krot khlaw	*Berberis vulgaris*	Mawrong	Dysentery	105/kg
18.	Sla syntiew	*Bryophyllum sp.*	Mawryngkneng	Spots on the tongue	65/kg
19.	Ka Ag	*Calotropis gigantea*		Malaria	
20.	Sohkynphor jew	*Carica papaya*	Dienglieng	Skin (cream)	65/kg
21.	Bat moina	*Centella asiatica*		Diarrhoea	
22.		*Costus speciosus*		Fever	
23.	Shynrai khlaw	*Curcuma aromatica*		Asthma, Tuberculosis	
24.	Sying Stem khlaw	*Curcuma sp.*	Mawryngkneng Sohryngkham	Rheumatism, spondolitis	250/ kg
25.	Shynrai iong	*Curcuma sp.*	Kyrdem, Mawryngkneng	Gastric ulcer, rheumatism, stroke	80/kg
26.	Jawieh raid	*Cuscuta reflexa*	Sohryngkham	Gastric ulcer	30/kg
27.	Tiew shulim	*Datura stramonium*	Sohryngkham	Paralysis, rheumatism, stroke	20/kg
28.	Sla tiew dieng lieh	*Datura stramonium*	Mawrong	Paralysis	55/kg

29.		*Drymaria cordata*		Antidote for snake bite	
30.	Sohmylleng	*Emblica officinalis*	Ri bhoi	Blood pressure	30/kg
31.	Tyrphin	*Eucalyptus sp.*	Upper Shillong Mawlen	Cancer	
32.	Jarain	*Fagopyrum cymosum*		Medicinal salad	40/kg
33.	Lathynrait	*Gaultheria fragrantissima*	Sohryngkham	Rheumatism	15/kg
34.	Kynbat Khawiang	*Hedychium sp.*	Sohryngkham	Gastric ulcer, skin disease	45/ kg
35.	Shynrai khlaw	*Hedychium sp.*		Respiratory ailment	
36.		*Hedyotis scandens*		Cough & cold	
37.	Jamyrdoh	*Houttuynia cordata*		For reducing blood sugar	40/kg
38.	Sying Smoh	*Kaempferia rotunda*	Umroi, Mawthei	Dysentery	200/kg
39.	Latana iong	*Eupatorium adenophorum*	Thangsning	Burns	weed
40.	Dieng soh sying	*Litsea citrata*		Perfume deodorant, insect repellent	Not known
41.	Dienglieng	*Melia composita*		Gastric	4/kg
42.	Kynbat iambait	*Mimosa pudica*	Umsning	Diabetes	100/kg
43.	Pashor kait	*Musa paradaisica*	Sohryngkham	Ringworm, thread worm	15/kg
44.	Tiew rakot	*Nepenthes khasiana*	Jarain	Asthma, Indigestion and kidney problem	300/kg
45.	Soh lakthut	*Osbeckia sp.*	Thangsning	Swelling of muscles	85/kg
46.	Dieng jyrmi pnah	*Paederia sp.*	Sohryngkham	Fractures	300/kg
47.	Jynseng	*Panax pseudoginseng*	Mawphlang, Nongkrem	Asthma, cancer, heart, paralysis, rheumatism Stroke, ulcer, STDs.	500/kg
48.	Langniang Kynthei	*Potentilla fulgens*	Nongkrem, Mylliem, Thangsning	Blood pressure, dry throat	45/kg
49.	Langning Shynrang	*Potentilla mooniana*	Sohryngkham, Thangsning	Thyroid, liver	80/kg
50.	Ryndia khlaw	*Ricinus communis*	Mawrong	Paralysis, rheumatism, stroke	Not known
51.	Jamynrei	*Salix eriophylla*	Thangsning	Fever	35/kg
52.	Diengkseh Blei	*Taxus baccata*	Lumdieng	Brain tumour, cancer	500/kg
53.	Jatira khlaw	*Thallictrum foliosum*	Thangsning	High blood pressure	25/kg
54.	Jyrmi khlaw	*Tinospora cordiflora*	Langkyrdem	Low blood pressure	105/kg
55.	Tyllai skip	*Vitex negundo*	Thaden	Muscular pain	170/kg
56.	Jaiur blei	*Zanthoxyllum sp.*	Sohryngkham	Skin diseases	20/kg

Another dimension that has emerged on this medicinal plant related activity from this on-going study, is the quantum of medicinal plants used in the four districts covered. Using information /data collected from 200 herbal practitioners, a rough assessment of the financial implications of this activity could be perceived. Estimates were calculated, using logistics such as number of practitioners, average prices of medicinal plants in the local market and the total volume of the herbal formulations that are circulated and the result implied that, 80-120 tonnes of medicinal plants or their products are consumed per year, involving an amount of Rs. 2-5 crore per annum {**Table-II (a) and (b)**}.

TABLE II (a)

No. of Herbal practitioners	Quantum of medicinal plants used per practitioner	Total quantity of medicinal plants used (kg)	Average rate/kg in Rs	Total amount (Rs.) in lakhs per annum
200	400-600	80,000 -120,000	50.00	40-60

TABLE II (b)

Amount of mixture used in gms/ litre	Average quantity of medicinal plants used per year (kg)	Total volume of formulation per year in lakhs litres	Average selling rate per litre (Rs)	Total amount in lakhs/annum
50-100	100,000	10-20	25.0	250-500

Undeniably, although this projection may be inaccurate, as exact figures are not available, its significance should not be lost sight of. This extrapolation could serve as a reference point in the absence of any literature or data on this activity. The analysis also serves to highlight the issue and importance of medicinal plants related activities in this State in particular and the region in general.

Recommendations

From the above figures on medicinal plants, it is quite obvious that there is much to be done in this field. Serious attention should be given to its trade potential not only as means of earning revenue for the State but by virtue of it being a traditional practice it has a strong relevance to the socio-economic aspect of the community and the people. In accordance with the Convention on Biodiversity Conservation and Sustainable Use, due recognition of indigenous knowledge must be emphasized and that regulatory development need to protect existing resources of medicinal plants and Indigenous Knowledge System (IKS) pertaining to their use. Therefore, any research on medicinal plants should also include and reflect the concept of traditional, theoretical and clinical assumption rather than view traditional knowledge as just raw material for drug discovery.

For people's participation to achieve any degree of success, stake of local people in the surrounding natural resource management must be emphasized and rights and benefits must accrued to them[13]. The Kani tribe of Kerala being granted their share of property rights is a case in point[14]. Local resource persons, such as herbal practitioners should be granted their

social recognition, property rights, managerial authority and other incentives so that they could be motivated further to conserve and use biodiversity in a sustainable manner.

A statewide movement to document indigenous peoples' knowledge, claims and perceptions about biodiversity utilization at the village level is a must. Projects to conserve medicinal plants *in situ* and *ex situ* conservation sites is on going in South India which began in 1993. This has resulted in the inventorisation of 1500 species[1]. Considering the varying degrees of Threats, it is important to have a prioritized conservation action, a Red list of medicinal plants of the State and the Region should be developed in consonance with IUCN listing.

The government should also focus on providing more market information, by way of setting up a marketing information cell. It should steer in a direction of expanding the trade activities by exploring out trade potentials and ultimately setting up phyto-pharmaceuticals industries. In this context, there is a need to conduct ethnobotanical and market surveys as well as promotion of organic cultivation of medicinal plants and scientific validation.

With biopiracy posing a serious threat to the State's genetic resources coupled to the rampant unregulated sale of many orchid and medicinal plant species right in the heart of the capital requires an urgent legislation to combat this threat. Policy framework should therefore include the following:

1. Each state should have their own CITES list.
2. Strict regulation of collection from the wild.
3. Creation of a favourable economic environment for commercial cultivation of medicinal plants.
4. Ensuring long-term in-situ measures for conservation.
5. Fostering and facilitating durable and sustainable partnership between Industry, Local Communities and the Research and Development Institutions.
6. Patent information centre

An appropriate mix of technologies, policies and forward-looking industry sector could ensure a sustainable conservation of herbal wealth into economic wealth and health.

As there will be increasing demand for herbal medicine there will also be a growing concern on maintaining their quality. Development countries are very much quality conscious. However there is a complete absence of any effective regulatory agency in the Lines of Federal Drug Agency of the United States. WHO has emphasized on the need to ensure the quality of herbs and herbal formulations by using modern techniques. To this effect several pharmacopoeias have provided monographs stating the quality parameters and standards of many herbs and herbal products [15]. However, it should be borne in mind that genuine potentials for complex mixtures to address serious disease should not be overlooked by drug trials which exclusively addresses reduce fraction or single molecules[1]. Synergistic effects is part and parcel of the body own mechanism of action, nonetheless considering the huge scope and potential of the medicinal industry some form of regulation and quality control even for these crude but time tested formulations is necessary. Each State must judiciously constitute regulatory bodies keeping in mind the interest of all, especially the rural folks, ensuring that local herbal practitioners are not marginalized.

Conclusion:

Health care has always been the subject of interest to people as it relates directly to our well being. Evident from the above scenario, it is obvious that medicinal plants industry offers an alternative and viable form of activity, which can be tapped sustainably. At present, medicinal plants are being unscientifically and unsystematically exploited. Given its traditional value and the potential of this activity *vis-a-vis* pharmaceutical applications and trade, there is an urgent need for awareness, legislation and also strengthening our bureaucratic and legal framework to meet the needs of the people. Lastly, there is a need to review as well as prepare a new agenda vis-à-vis biodiversity and medicinal plants per se, as globalization impact will have its effects even in these remote States. A new agenda for change is necessary to review our old policies and evolve new strategies so that we are prepared to face the pressure and challenges of the new millenium.

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